

The Australasian MANUFACTURER

SERVING ALL INDUSTRY

XIXV - No. 1785.

Registered at the G.P.O., Sydney, for
transmission by Post as a Newspaper.

Saturday, June 17, 1950.



"Angus" GACO

M. I. (METAL
INSERT)

OIL SEALS

SUPERSEDING
METAL CASED SEALS

The outer surface of Gaco material instead of metal provides a perfect fluid tight fit in the housing.

Gaco is a scientifically developed synthetic of remarkable heat and oil resistant properties. It is resilient and ideal for retention of oils, greases and fluids of various kinds.

COMMONWEALTH DISTRIBUTORS:

GARDNER WAERN & CO. PTY. LTD.

481 FLINDERS ST., MELBOURNE

Phone: MU 9451

45 WATT ST., NEWCASTLE

Phone: B 1587

208 CLARENCE ST., SYDNEY

Phone: MA 9134

AGENTS IN ALL STATES

AFTER BUSINESS HOURS

What Next?

GEORGE Pappavlahodimitrakopoulos, who has opened a restaurant in Michigan, U.S.A., is offering a free meal to anyone who can pronounce his name correctly the first time. The score to date: Nil.

THIS week's prize for honest advertising goes to a South Australian who had a house for sale. After listing its virtues in the standard phrases, he said it was one minute from the station—"downhill at a steady gallop, toast in hand, coat tails flying, while sprinting for the 8.15."

THESE characters you hear about who never smoke or drink or have anything to do with women—how do they celebrate, and what?

WASHINGTON police found a 23-year-old man in his kitchen trying to bite a dog. When they stopped him he protested: "It's my dog. I can bite it if I want to."

AN official of America's National Potato Crisp Institute said recently: "There is a technique in eating crisps that

makes the procedure absolutely noiseless. One gently breaks the chip into two pieces and allows the halves to melt in the mouth. It's a lot quieter than eating celery." If it is necessary to break them in half, we think why not make them only half as big. And if we are to be denied the joyous crunch-crunch to which we are accustomed, why bother to make them crisp?

SCIENTISTS of the United States Rubber Company have good news for men who hate mowing the lawn—and who doesn't. They have developed a new chemical compound (maleic hydrazide) which will slow down the growth of the grass so that the lawn will need cutting only every six weeks.

SIGNING a paper without reading it has made many a man wish he had read it without signing it.

A group of American ex-servicemen were discussing their most frightening wartime experiences. A coloured ex-soldier said: "The time Ah was mos' scared wasn't on no battlefield. Ah was home on leave in Harlem an' Ah met up with a high-yaller gal. Hot dog! That gal took me up to her apartment. Well, sir, there we was, gettin' acquainted, an' mighty cozy, too, when the door busts open an' in comes a big buck nigger. Was Ah scared? Brother, Ah was so scared he said to me: 'What you doin' wid mah wife, WHITE MAN?'"

THE man who likes to read at the breakfast table is likely to finish up reading his wife. A young Washington couple have introduced what promises to be the U.S. capital's most controversial garment fad. New women's blouses are being made with type from the pages of the 1999 Strata Star printed on them. The blouses report 185,000 m.p.h. cruises to the moon and Mars, and report the discovery of "perfect eight-course dinner pills" among other things. This is a good thing, we think. What has been needed for a long time is an excuse for prolonged staring at blouses.

THE Ford Motor Company gave 1,700,000 aspirin tablets to employees last year. The manager of employee relations for the company told the Association

of Commerce and Industry in Chicago recently that aspirin was given free to employees as well as more than half a million cold tablets, and nearly 2,000 tubes of salve to rub on muscles made sore by week-end golf, baseball and skating. He said the firm uses 1,500 bottles of citrocarbonate a year to treat upset stomachs, operates 28 hospitals and 35 first aid stations, and employs 38 doctors.

THIS incentive business! Competitors in the annual half-mile London waiters' race carried three full glasses on a tray. Asked why, this year, glasses were filled with real champagne instead of water, an official replied: "That helps the runners to be more careful. They drink what is left."

A Staffordshire man, charged with stealing, told the magistrate that he and his wife had not spoken to each other for seven years, although they had lived in the same house. His wife was indignant. "It's only three years," she said.

MUCH-maligned mothers-in-law aren't such a menace as some people think, according to an analysis of cases by the Southampton Marriage Guidance Council. The chairman of the council said: "The highest percentage of marriage breakdowns last year was due to the eternal triangle. Second came sex maladjustment and third was incompatibility—which really means sheer bad temper and selfishness." Mothers-in-law were at the bottom of the list.

A woman in San Francisco was awarded a divorce and \$100 a month alimony, but it was stipulated that she must return her husband's banjo, stamp and coin collections and false teeth. In another State a recently divorced man phoned the probation office to say that he wouldn't be down to make his weekly alimony payment, because: "My wife took my shoes."

IN Sydney, recently, a woman persuaded the Court to give her husband three weeks' grace on a debt instalment, so that she could go and win the money at the races.

FROM the U.S. comes news of two interesting developments. Men's socks woven of nylon and



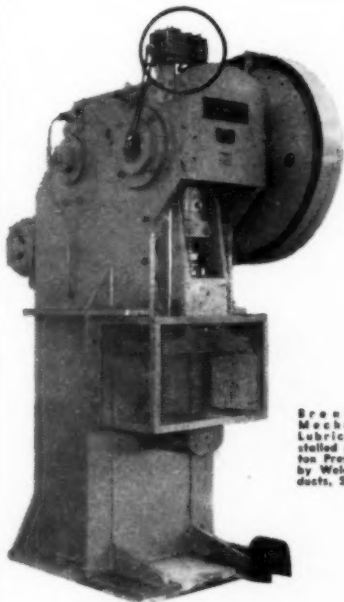
THESE OIL COMPANIES

RELY ON OUR DRUM RECOVERY FACILITIES
TO MAINTAIN AUSTRALIA'S VITAL NEEDS . .

- ◆ **AMPOL** Petroleum Ltd.
- ◆ **ATLANTIC** Union Oil Co.
- ◆ **CALTEX** Oil (Australia) Pty. Ltd.
- ◆ **NEPTUNE** Oil Company Pty. Ltd.
- ◆ **SHELL** Co. of Australia Pty. Ltd.
- ◆ **VACUUM** Oil Co. Pty. Ltd.
- ◆ **VALVOLINE** Oil Co.

Without a constant flow of oil, all activity on this continent would cease. How you can help, and how we do help, to offset the nation's critical drum shortage is explained in "New Drums For Old"—free and post free.

R. L. THOMAS PTY. LTD.
CONTAINER RECOVERY ENGINEERS AND DRUM MERCHANTS
74 IVY STREET, CHIPPENDALE, N.S.W.
PHONES: MX 2638-3638



Brentford
Mechanical
Lubricator in-
stalled on a 75-
ton Press, made
by Welded Pro-
ducts, Sydney.

The only *SURE* method is AUTOMATIC LUBRICATION

Why run the risk of serious and costly damage to valuable machinery with out-of-date hand or gravity lubrication?

TECALEMIT "Brentford" Mechanical Lubricators—for use with oil—ensure a correct and adequate supply of fresh oil under pressure to every bearing and working part at pre-determined regular intervals . . . the human element and disadvantages of gravity feeds are entirely eliminated.

There's a TECALEMIT Mechanical Lubricator to suit the particular requirements of your own machines.

Modernise your plant with TECALEMIT and ensure against breakdowns, frequent overhauls, costly hold-ups and high maintenance costs.

CONSULT US ON YOUR LUBRICATION PROBLEMS

(N.S.W. DISTRIBUTORS)

MANUFACTURER'S EQUIPMENT CO.

280 CASTLEREAGH STREET, SYDNEY. TELEPHONE MA 2716

DIVISION OF WESTCOTT HAZELL

ME 5. MP

a new wool-like, mothproof synthetic made from field corn, is reported to outwear wool and sell for less than half the price of wool. Coats lined with a metalized fabric are being made by leading apparel manufacturers there. By coating the underside of the fabric with an aluminium solution, the process makes a topcoat as warm as a winter coat, a sheet as warm as a heavy blanket.

At Random

The older a girl gets, the more her chocolates cost.

The man of the hour is the one whose wife told him to wait a minute.

Beach: A place where people lie upon the sand—about how rich they are.

Fatigue is no more praiseworthy than drunkenness. Both are evidence of bad habits.—"Modern Industry."

Some people's voices are hard to extinguish over the phone.—"Philnews."

A wise old woman once insisted that she liked bad children best of all. When asked why, her answer was, "They are always sent out of the room."—John Mason Brown, "Saturday Review of Literature."

A 14-years-old lad of our acquaintance, living for the birthday that will make him old enough to drive a car without

parental consent, has been experimenting in the garage with his father's new '50 model, which has an automatic shift. He observed the absence of the traditional clutch, made an imaginary solo flight, then philosophized: "I suppose a thousand generations from now, people will be born without left legs."—"Minneapolis Tribune."

We all know that sourness spoils milk. It's too bad more people don't know it has the same effect on people.—"Bendixline," Bendix Aviation Corporation.

The aviation instructor, having delivered a lecture on parachute work, concluded with these words: "And if it doesn't open—well, gentlemen, that's what is known as 'jumping to a conclusion.'"—"Coal Dealer."

A conf is an organised way of postponing a decision.—"Banking."

METAL CUTTING SAWS.

ATTACHMENT AND DRIVE FOR COLD WORKING.

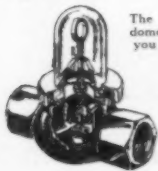
The Standards Association of Australia has issued a revision of its Specifications for the Attachment and Drive of Circular Metal-cutting Saws for Cold Working (B. 44-1950).

The specification is an endorsement without amendment of British Standard 387-1948, which supersedes the 1930 edition. No alteration has been made to the dimensions and tolerances of those sizes of saw which were included in the previous edition; but the mountings of saws above 60 in. and up to 72 in. diameter are now included in the specification.

Copies of the standard may be purchased from the Standards Association of Australia.

Arkon FLOW INDICATOR

IS THE COOLING WATER CIRCULATING?
IS THE BEARER GETTING THE OIL?



The oil or water spins a chromium-plated ring under a glass dome. If the flow stops, the ring stops spinning and warns you that something has gone wrong.

IMMEDIATE DELIVERY

N.S.W.: H. G. Thorntwaite & Co., 43 Margaret St., Sydney (BX 3603). VIC.: Horrocks Roxburgh Pty. Ltd., 817-9 Little Collins St., Melbourne. S.A.: E. Treliving & Son Ltd., Light Square, Adelaide. Q'LAND: Farbury, Henty & Co. Pty. Ltd., 108 Edward St., Brisbane. TAS.: Douglas & Fraser, 41 Paterson St., Launceston.

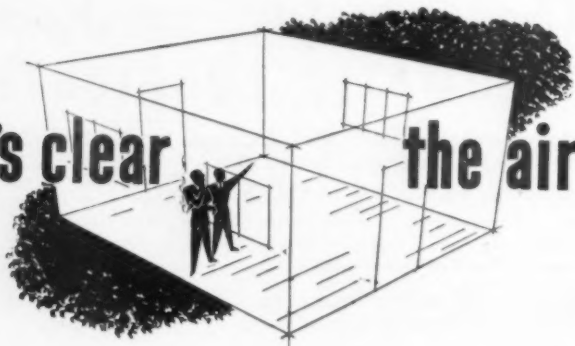
THOMPSON & WILLIAMS

MACHINE TOOLS AND ENGINEERS' SUPPLIES

WE CARRY LARGE STOCKS OF Ground Thread Dies for Coventry Self-opening Dieheads, Coventry Dieheads and Parts, Lathe Equipment and Chucks, H.S. Slide and Face Cutters, Milling Cutters, Slab Mills, Reamers, Twist Drills, Taps and all Engineers' Cutting Tools, Electric Grinders and Drilling Machines. PERSONAL SERVICE GIVEN.

28 Market Street, MELBOURNE. 'Phones: MB 2121 and MB 2122.

let's clear the air



24" Aerex Mancooler

Displaces 6,000 cubic feet per minute and is operated by a $\frac{1}{2}$ h.p. motor.



Air Turbine Fan

Available for use with compressed air in 12", 16" 20" and 24" diameter. Compressed air up to 85 lbs. per sq. in. may be used.



42" Industrial Exhaust Fan

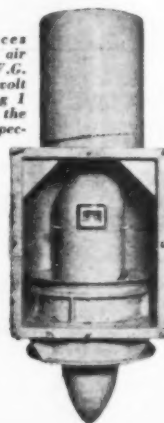
Displaces 20,000 cubic feet per minute at 3.5 in. W.G. A 20 h.p. motor is required.

Wherever fumes, dust or excessive heat tend to choke production, the installation of suitable Aerex Fan equipment will "clear the air" and restore comfortable working conditions. The application of modern aerodynamic principles in design makes possible efficiencies up to 90%, resulting in a substantial saving of power consumption. All Aerex Fans can be supplied with a special surface treatment that ensures long life even in corrosive atmospheres.

Our engineers will welcome the opportunity of advising you on your ventilating problems.

18" Type Ship Ventilating Fan

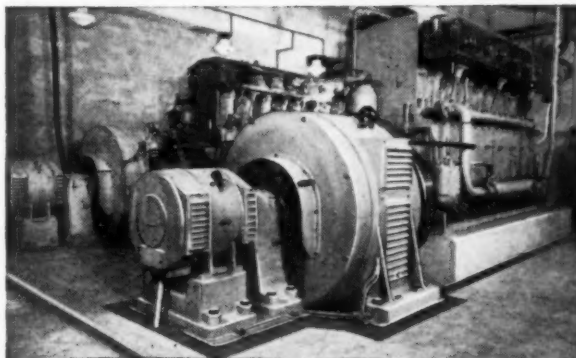
This type displaces 4,000 cubic feet of air per minute at 1 in. W.G. The motor is a 220 volt D.C. type generating 1 h.p. A feature is the easily accessible inspection hatch.



Aerex

AUSTRALIA COY.
P.O. BOX 1, WATERLOO, N.S.W.

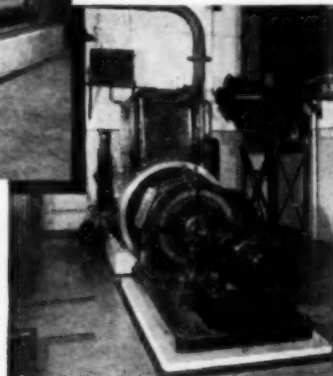
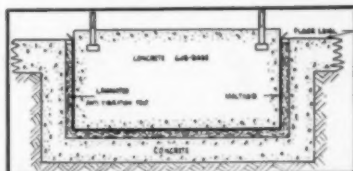
FOR THAT EMERGENCY POWER PLANT INSTALLATION ELIMINATE EXCESSIVE VIBRATION WITH "VIBASORB" FELTS



VIBASORB LAMINATED

*Twin MirrLees 8 cylinder 378
B.H.P. 261 K.W. Diesel
Generating Units.*

The above Units are installed with
"Vibasorb Lamination" in this method which
shows complete isolation of unit mounting
from surrounding buildings.



*Blackstone 3 cylinder, 120 B.H.P.
100 K.V.A. Diesel Generating Unit.*

DIRECT COUPLED UNITS MOUNTED ON COMMON BASE INSTALLED ON "BLUE VIBASORB"

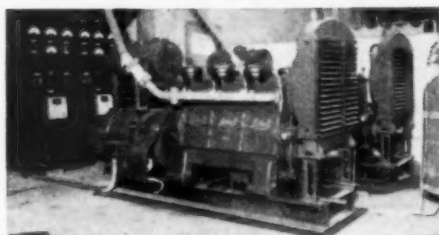
Save installation costs, no bolts re-
quired, adhered to floor and base by
means of Vibasorb Cement.

*Inquiries in New South Wales, South Australia, West Australia,
Queensland and Tasmania, communicate with—*

**INDUSTRIAL FELT DIVISION
FELT & TEXTILES of AUST. LTD.**
BOX 4281, G.P.O., SYDNEY. TEL. MU 2317

Victorian Inquiries to—

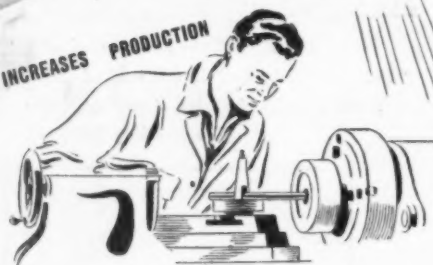
**Donald Don, 316 Russell St., Melbourne,
Victoria.**



Lister Blackstone Diesel Generating Unit



Royal "Ediswan" Fluorescent lamps keep your factory lighting well on the right side of the "safety line"—ensuring speedier production, reduced accident rate and improved worker morale. Royal "Ediswan" Fluorescent Lighting gives soft, diffused light from a relatively large area—eliminates dark shadows, minimises glare from bright steel surfaces, making seeing easier, free from strain. Cool to the touch and three times as efficient as filament lamps of equivalent wattage, Royal "Ediswan" Fluorescent lamps increase your light output without the need for additional outlets or conduit wiring and are economical in current consumption.



ROYAL
"EDISWAN"
FLUORESCENT LAMPS

Distributors for The Edison Swan Electric Co. Ltd., England.

N.S.W.: H. Rowe & Co. Pty. Ltd.,
Swans Ltd.

VIC.: H. Rowe & Co. Pty. Ltd.

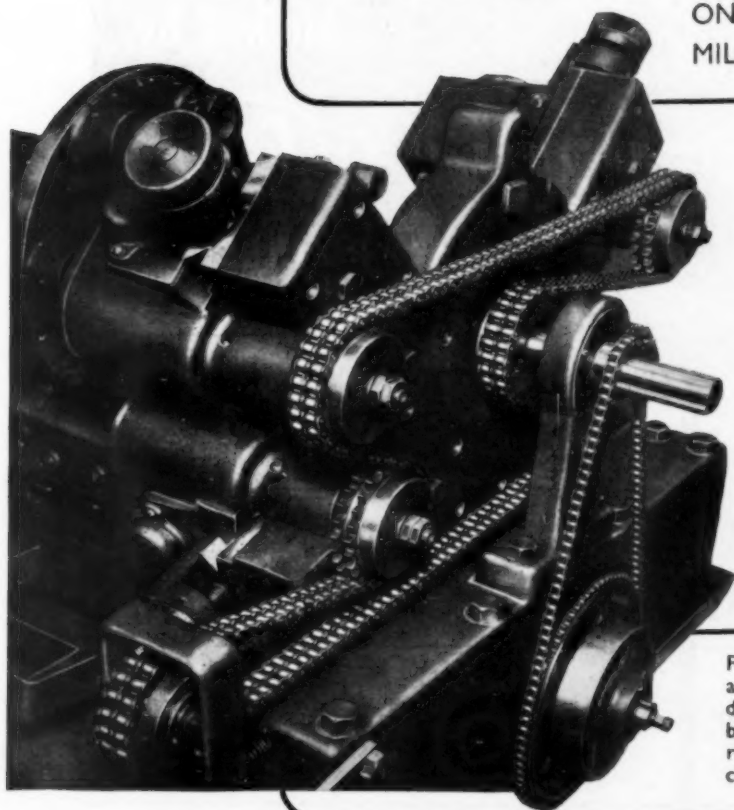
QLD.: Engineering Supply Co. of
Australia Ltd. (E.S.C.A.),
H. Rowe & Co. Pty. Ltd.

W.A.: Carlyle & Co. Limited.
S.A.: Oliver J. Nilson & Co. Ltd.
H. Rowe & Co. Pty. Ltd.
TAS.: Charles Davis Ltd.

RENOLD

POWER TRANSMISSION

ON SPECIAL AUTO
MILLING MACHINE



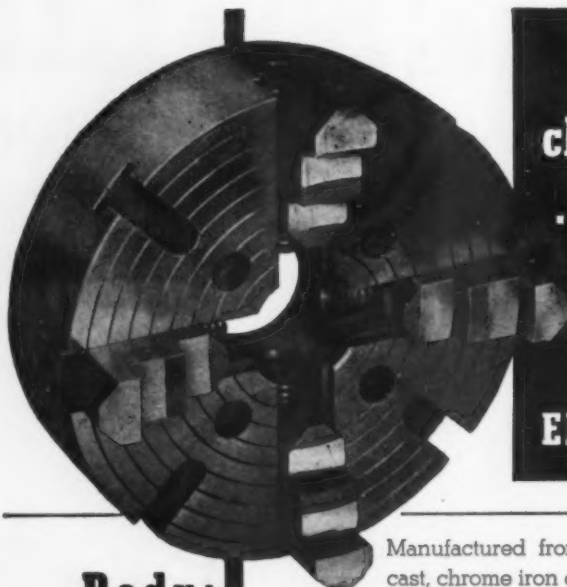
Four cutter spindles on
auto milling machine,
driven from one shaft
by one Renold duplex
roller chain. Separate
chain drive to feed cam.

REPRESENTATIVES IN AUSTRALIA AND NEW ZEALAND

QUEENSLAND, BRISBANE: ENGINEERING SUPPLY CO. of AUSTRALIA LTD., Edward and Charlotte Streets. Tel.: B 1171.
SOUTH AUSTRALIA, ADELAIDE: AUSTRAL ELEVATOR CO. LTD., 140 Hindley Street. Tel.: Cent. 2240 (night U 2239).
NEW SOUTH WALES, SYDNEY: GIBSON, BATTLE & COMPANY LIMITED, 535 Kent Street. Tel.: M 6661.
WESTERN AUSTRALIA, PERTH: WM. ADAMS & COMPANY LIMITED, 432-436 Murray Street. Tels.: B 9393 and B 5046.
VICTORIA & TASMANIA, MELBOURNE: ASSOCIATED MACHINE TOOLS AUSTRALIA PTY. LTD., 546 Collins St. Tel.: MY270.
NEW ZEALAND, WELLINGTON: A. R. CHRISTIAN LIMITED, 45 Tory Street. Tel.: 51,000.



Transmission and Conveying Chains, Wheels and Accessories for all mechanical purposes
THE RENOLD & COVENTRY CHAIN CO. LTD. • MANCHESTER • ENGLAND



**Advanced
chuck design
..backed by**



ENGINEERING

Body:

Manufactured from close grained, chill cast, chrome iron of high tensile strength. Chuck bodies are finish ground on the location diameter as well as the face and the periphery.

**Jaws &
Screws:**

Reversible jaws are manufactured from nickel chrome, steel forgings, case hardened and ground on all faces. All threads are generated in a special purpose machine to maintain accuracy and precision, thus giving added life to the chucks.

Assembly:

Operating keys are supplied and chucks are provided with four holding-back bolts of high tensile steel, fitted with socket heads. Each chuck is carefully assembled from components, is rust proofed and packed in a wooden box before delivery.



COOTE & JORGENSEN LIMITED

606-612 BOTANY RD. ALEXANDRIA, N.S.W.

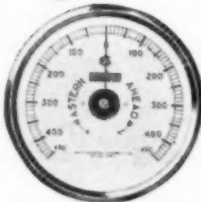
Manufacturers of

Automotive Gears, "Maximum" Speed Reducer Units and
Specialists in Gearing

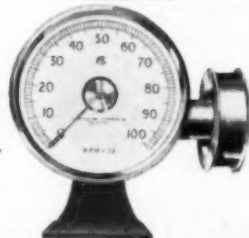
AVAILABLE FROM ALL LEADING MACHINERY MERCHANTS



INDUSTRIAL INSTRUMENTS FOR MEASURING, COUNTING, RECORDING.



TWO DIRECTION MARINE R.P.M.
INDICATORS



A.T. REVOLUTION INDICATORS

REVOLUTION INDICATORS

High-grade precision instruments operating on the magnetic principle, each instrument incorporates a magnet of special alloy steel, and a movement carried on jewels. It is individually manufactured and calibrated. The construction is such that variations due to temperature changes are within fine limits of accuracy.

Accuracy is maintained to plus or minus 1% over a temperature range of 10-30 deg. C. Standard R.P.M. Indicators are available in a wide range of types and sizes. Other Models up to 9in. dials.

REVOLUTION INDICATORS WITH PULLEY AND ANGLE DRIVE. Dial Calibrations are clockwise, anti-clockwise or two-way reading. Hand-engraved to clients' requirements. Angle Drive fitted for drive to appear on left- or right-hand of instrument. Robust design. Pulley supplied up to 4in. diameter.

MARINE MODELS supplied with or without counter in 5 or 6 figures.

S. SMITH & SONS (AUSTRALIA) PTY. LTD. SALES AND SERVICE

Representing Smiths Industrial Instruments Ltd., England

N.S.W.: Aircraft Industrial Marine Instrument Co. Pty. Ltd., 279 Clarence Street, Sydney. MA 5791;
VIC.: Keep Bros. & Wood Pty. Ltd., 200 Latrobe Street, Melbourne. FJ 1155.
QLD.: Instrument Engineering Company, 32 Annerley Road, South Brisbane. XU 3228.
S.A.: Newton, McLaren Ltd., Leigh Street, Adelaide. Cent. 8340;
W.A.: Tough Instrument Service Co., 351 Murray Street, Perth. B 7615.



More than a million shareholders draw daily dividends *in SERVICE* from the Sydney County Council

From this one great public utility over a million people draw their light, heat and power.

The Sydney County Council is conducted solely for the benefit of its customers. Its object is SERVICE . . . service to satisfy the needs of the community, service to encourage the development of industrial enterprises, service to increase the well-being of the

people generally. The Sydney County Council, like any other institution of comparable size, may make mistakes. But it is at all times ready and anxious to rectify mistakes and misunderstandings.

Every customer of the Council is invited to make suggestions for the improvement of the Council's service and constructive criticism is never resented.

THE SYDNEY COUNTY COUNCIL ELECTRICITY UNDERTAKING

Queen Victoria Building, George Street, Sydney.

Showrooms at: Bondi, Burwood, Campsie and Crows Nest

TOROID

HIS ORGANISATION REALLY OFFERS INDUSTRIAL DEVELOPMENT

INDUSTRIAL SUPPLIES PTY. LTD.

ANNOUNCING!

The manufacture of "TOROID" BEARING METAL under exclusive rights for AUSTRALIA and NEW ZEALAND in accordance with the World Patented formula of TH. GOLDSCHMIDT CHEMICAL WORKS, ESSEN.

Previously marketed under Trade-name

"THERMIT"



The World's Best "ALL-PURPOSE" BEARING METAL (Guaranteed made from virgin metals)

PHYSICAL AND MECHANICAL PROPERTIES

	"TOROID" BEARING METAL	(Regal Metal) 83.3% Sn, 5.6% Cu, 11.1% Sb	WM. 70 White Metal, 70% Tin
Melting Point	420° C. = 788° F.	360° C. = 716° F.	405° C. = 761° F.
Softening Point	245° C. = 473° F.	232° C. = 449° F.	185° C. = 365° F.
Casting Temperature	480-520° C. = 896-968° F.	470-600° C. = 878-1112° F.	480-500° C. = 896-932° F.
Shrinkage	0.55%	0.5%	0.55%
Brinell Hardness at—			
20° C.	28-30	32-34	29-31
50° C.	21.5	28	19.5
100° C.	19.5	14	8.5
125° C.	13	10.5	5.5
Breaking Load at 20° C.	24,800-27,000 lbs.	27,000 lbs.	21,600 lbs.
Compression at Breaking Load at 20° C.	35 to 38%	40%	35%
Load with 2% Compression at 20° C.	12,500 lbs.	14,000 lbs.	13,000 lbs.
Breaking Load at 100° C.	12,500 lbs.	12,000 lbs.	12,200 lbs.
Compression at Breaking Load at 100° C.	40 to 45%	40%	56%
Load with 2% Compression at 100° C.	10,000 lbs.	8,800 lbs.	7,300 lbs.
Admissible Load at—			
V = 2.02 Ft./Sec.	2,133 lbs./Sq. in.	1,990 lbs./Sq. in.	
V = 3.44 Ft./Sec.	2,133 lbs./Sq. in.	1,777 lbs./Sq. in.	
V = 6.89 Ft./Sec.	1,777 lbs./Sq. in.	1,777 lbs./Sq. in.	
V = 8.94 Ft./Sec.	1,777 lbs./Sq. in.	1,630 lbs./Sq. in.	
V = 13.12 Ft./Sec.	365 lbs./Sq. in.	386 lbs./Sq. in.	
P x V at—			
V = 2.02 Ft./Sec.	4,433 lbs./Sq. in. Ft./Sec.	4,106 lbs./Sq. in. Ft./Sec.	
V = 3.44 Ft./Sec.	7,373 lbs./Sq. in. Ft./Sec.	6,533 lbs./Sq. in. Ft./Sec.	
V = 6.89 Ft./Sec.	12,272 lbs./Sq. in. Ft./Sec.	12,272 lbs./Sq. in. Ft./Sec.	
V = 8.94 Ft./Sec.	15,964 lbs./Sq. in. Ft./Sec.	14,608 lbs./Sq. in. Ft./Sec.	
V = 13.12 Ft./Sec.	4,466 lbs./Sq. in. Ft./Sec.	4,666 lbs./Sq. in. Ft./Sec.	

FIGURES NOT
AVAILABLE

USE 'TOROID' BEARING METAL

The highest Quality Metal at the LOWEST COST

For full particulars: **TOROID INDUSTRIAL SUPPLIES PTY. LTD.**

528-530 Collins Street, MELBOURNE, VIC.

Agents — Q'land: Messrs. HOEY-FRY PTY. LTD.
N.S.W.: TOROID INDUSTRIAL SUPPLIES (N.S.W.) PTY. LTD.
S.A.: A. K. MENZIES.

Tas.: DOUGLAS and FRASER-WEDDS MACHINERY AGENCY.
N.Z.: RICHARDSON-McCABE and CO. LTD.



"MUSIC WHILE YOU WORK"

FACTORY OWNERS are reminded that if music is used in their factories, the permission of The Australasian Performing Right Association is necessary. Permission is granted on payment of a fee calculated at the rates listed hereunder:

Up to 50 Employees	£1 1 0
51 " 75 "	£1 11 6
76 " 100 "	£2 2 0

For over 100 employees the fees are calculated on the number of employees to whom the music is audible and the number of hours daily in which music is used with a minimum fee of £2/2/- per annum.

The fee is 1d. per employee per annum for 1 hour's music daily.
The fee is 2d. per employee per annum for 1 hour's music daily.
The fee is 3d. per employee per annum for 1 1/2 hours' music daily.
The fee is 4d. per employee per annum for 2 hours' music daily.
The fee is 5d. per employee per annum for 2 1/2 hours' music daily.
The fee is 6d. per employee per annum for 3 hours' music daily or more.

For further particulars contact

A. P. R. A.

Box 4007, G.P.O., SYDNEY, N.S.W.

Melbourne Representative: K. H. MOGINIE. 'Phone: WM 6773.

'Phone: BW 8493



Let "NATIONAL" help
you break those production bottlenecks!

- Specialists in large scale jobbing, production of machine parts, designing and/or production of specialised machinery.
- All work guaranteed to be of highest engineering standards.
- Speedy fulfilment of jobbing orders. Delivery of specialised machinery orders by arrangement.
- Designing and blueprint service available if required.

NATIONAL INDUSTRIES PTY. LTD. — MANUFACTURING ENGINEERS

52 O'Riordan Street, Alexandria, N.S.W. MU 2201.

Thor

Silver Line
ELECTRIC

IMPACT WRENCH

MOST POWERFUL EVER BUILT!



AMAZING ALL-PURPOSE IMPACT TOOL FOR SCORES OF JOBS!

For complete information about this great new Thor Silver Line $\frac{3}{8}$ " Electric Impact Wrench . . . including data on the scores of accessories that can be used with it . . . see your Thor distributor today for a convincing demonstration. Independent Pneumatic Tool Co., 330 West 42nd Street, New York 18, N. Y., U.S.A.

Distributed when available by:

GIBSON, BATTLE & CO., LTD., 535 Kent Street, Sydney

PASCOE & CO., LTD., 282 Port Road, Woodville, S. A.

WESTERN MACHINERY CO., PTY., LTD., 494 Murray Street, Perth

FRANK VIAL & SONS, PTY., LTD., 369 Queen Street, Melbourne

Thor . . . **PORTABLE POWER** . . .
TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS



THE ONLY THING TO
REPLACE LUDOWICI
BELTING IS MORE—

LUDOWICI **LIFETIME LEATHER** **BELTING**

SAVES **ON INITIAL COSTS** **SAVES** **ON MAINTENANCE**

PIONEER LEATHER BELTING features:-

- "WET-FRAMED" STRETCHED
- UNIFORM QUALITY
- "DEEP WELD" ADHESIVE
- SUPERIOR CO-EFFICIENT OF FRICTION
- LONG LIFE.

No belting has more proved, practical applications than PIONEER BELTING, a name famous in Australia for 92 years.

Pioneer Belting often saves money on "initial costs" and keeps saving it by providing continuous years of trouble-free transmission.

The only replacement for Pioneer Belting is more Pioneer Belting.



J. C. LUDOWICI & SON LTD.

117 YORK ST., SYDNEY, N.S.W. 20-26 QUEEN'S BRIDGE ST., STH. MELBOURNE, VIC.

OTHER LUDOWICI LINES OF EQUIPMENT INCLUDE:- Rubber Belting, Conveyor and Elevator Belting, Round Leather Belting, Textile Leathers, Belting Accessories, Leather Packings, High-Speed Grinder Belts, V Belt Drives, Industrial Clutches, Plain Bearings, Anti-Friction Bearings, Steel Shafting, Shafting Couplings, Shafting Hangers, Microid Bearing Metals, Porous Bronze Bushes, Gears, Pulleys, Wall Brackets, Variable-Speed Drives, Ludowici Piston Drives, Flap-Seal Oil Retainers, Composition Packings, Lutes, Industrial Plastics, Industrial Gloves, Rubber Hose, Lemcol Trucks, Wheels, Castors, etc., Perry Chain Drives.

Your Safeguard
AGAINST OIL
SEEPAGE...



SOLE DISTRIBUTOR

CEELX PTY. LTD.

571 VICTORIA ST., ABBOTSFORD, VICTORIA. Telephone: JA 4802

The Australasian MANUFACTURER

Established 1916

35th Year of Service to Industry

Telephones: Sydney, BU 3493, BU 3494.
Melbourne, FJ 3256.

Postal Address: Box 1687, G.P.O., Sydney, and
Box 4525, G.P.O., Melbourne.

Australia's National Manufacturers' Newspaper circulating in all States, New Zealand and Overseas. A weekly newspaper devoted to industrial efficiency and the manufacturing progress of Australia. Subscriptions within Australia and New Zealand (including Annual Number), £1/10/-; Great Britain and Possessions, £2; Foreign, £2/10/-. All subscriptions payable in advance.



PAGE FIFTEEN JUNE 17, 1950.

Shape of Australian Industrial Things to Come Lines Along Which Developments Are Taking Place

None would dispute the statement that Australian manufacturing developments during the five post-war years have touched undreamt of heights. Progress has marked every field. Expansion has taken place in every State. Throughout the length and breadth of the Commonwealth there has been an upsurge in industrial development which has brought high employment, high prosperity, and high living standards to every citizen of this nation.

EVIDENCE of the solidity of the situation is furnished by the fact that developments have taken the form both of the establishment of entirely new undertakings and of the extension of those already functioning. This means the planting of new seeds of enterprise and a wider cultivation of those already deeply rooted. The directions in which the major advances have been made are indicated in the following table, based on Commonwealth Government statistics. The figures represent nominal capital values in the £ Australian:—

Industry.	New plants.	Expansion of established plants.
Bricks, pottery, etc.	—	1 £100,000
Chemicals, etc.	17 £321,700	32 £8,745,700
Metals, machinery, engineering, etc.	38 £3,448,300	44 £9,514,450
Jewellery	3 £37,500	—
Textiles	14 £10,892,000	6 £2,536,700
Skins and leather	4 £61,300	3 £90,000
Clothing	8 £70,000	3 £200,500
Food, drink and tobacco ...	10 £519,700	3 £850,000
Timber and woodwork	1 £5,000	—
Paper, stationery, etc.	3 £2,304,200	1 £40,000
Rubber	1 £10,000	—
Musical instruments	1 £10,000	—
Miscellaneous	2 £110,000	1 £100,000
Totals	102 £17,789,700	94 £22,327,350

This large-scale development obviously has resulted from the flow into industry, not only of vast sums of Australian capital, but also of mighty sums from abroad. The main overseas countries which in one way or another are associated with the production of new lines within the Commonwealth are the United Kingdom, the United States, Canada, and Sweden.

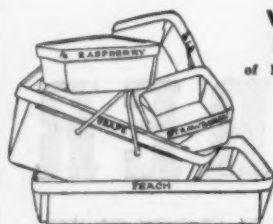
The significant advantages accruing to Australia from this highly satisfactory trend are thus summarised by the Commonwealth's Division

of Industrial Development: "Many large and important manufacturers from other countries have seen the opportunity which Australia offers to-day and are now producing here products backed by world-wide reputations. Most of these overseas firms have joined forces with Australian enterprise, thus bringing to Australian companies the most modern and efficient production 'know-how', the use of well-known brand names and products, expert technical guidance and skilled management. Introduction of overseas techniques and production methods into Australia by visiting technicians from Britain, the United States, and Canada during and since the war has assisted post-war development."

An expert estimate of the overseas capital which recently has been invested in Australia's manufacturing industries is £100,000,000. This has been put into the initiation or expansion of manufacture of such widely differing products as Australia's motor-car, the Holden; various types of car and truck bodies and parts; precision instruments; electrical apparatus; mechanical handling equipment; French-type fine woollen yarns; dental and medical supplies, including artificial eyes, dentures, dental filling, plastic skin, and model cement; table knives; chemicals; electronic stoves; cement (by a modern wet process); titanium pigments; oxygen and acetylene for welding and cutting operations; cotton yarn from Australian-grown cotton; latex foam cushioning; viscose and acetate rayon yarn; ribbons; lace; cottons and thread; and a wide array of cosmetics.

Chief among the expansion projects may be named a £6,275,000 plan to extend sheet steel production at Port Kembla; installation of an 80-inch reversing mill at the same centre; a new fully mechanised iron foundry at an old-established plant at Ballarat, Victoria; new gear-cutting plant at a well-known New South Wales engineering works; and developments on an unprecedented scale at Newcastle and Port Kembla to step up the production of steel and initiate the manufacture of tinplate.

While it is true that by far the greater part of the capital inflow has derived from the United Kingdom, it is equally true that a much



WOOD, WOOL AND FRUIT CONTAINERS

of Every Description. Baskets for
Strawberries, Blackberries,
Raspberries, Loganberries.

AUSTRALIAN BERRY BASKETS CO.

178 Kent St., RICHMOND, VIC.
Phone: J 1263.
500 Kent Street, SYDNEY.
Phone: MA 8755.

greater percentage of United States capital could be attracted to these shores if wiser counsels prevailed in Government circles. Chief deterrent at the moment is, of course, double taxation, whose incidence, according to financial experts, is responsible for the reluctance of American capital to seek investment in this country. This point was emphasised some few months back by the managing director of Eveready (Australia) Ltd., Mr. E. L. Brisbin, who on his return from a business trip abroad declared: "A lot of American capital is waiting to come to Australia. But only removal of double taxation will bring it here. This capital has been

WAXES

Specially manufactured for INDUSTRIAL PURPOSES

Varieties include High Melting Points, Hard, Self-emulsifying, Adhesive, Non-shrinking, Dielectric, Acid and Alkali Resisting, etc.

THERMO PLASTIC MOULDING COMPOUNDS

WILLIAM PRICE FW4069 FW1909

Cnr. Newland and Victoria Streets, Bondi Junction, N.S.W.

ready to move into Australia for a long time, but investors have held back only because of taxation . . . I have no hesitation in saying that capital for all types of industry will flow into Australia from America if the Menzies Government eliminates double taxation."

This, then, is the shape of industrial things to come within this Commonwealth. Given wise government, an adequate measure of protection, able management, vision and courage on the part of industrialists, and a determination by workers to bring to their tasks interest, zeal, and continuity, the immediate future should see, not only a continuance of this prosperous trend, but also its expansion on enduring foundations.

Pithy Jottings of Industry and Industrialists

A.G.E. DIRECTOR GOES ABROAD.

Mr. S. E. Barratt, Director in Charge of Manufacturing Operations, Australian General Electric Pty. Ltd., left by air on 28th May for England, where he expects to



Mr. S. E. Barratt,
Director of A.G.E.

remain for about two months. On his return journey, Mr. Barratt will spend a few weeks in Canada and the U.S.A.

LINSEED CRUSHERS' ASSOCIATION.

A new Association called the Linseed Crushers' Association of Australia has been formed. The present members are Meggitt Ltd., Harold Meggitt Ltd., James Barnes Pty. Ltd., and Hemphill Gray Oil Mills Pty. Ltd. The objects of the association are to forward and protect the interests of crushers of linseed and/or other vegetable oil seeds in the Commonwealth.

Mr. E. A. Holden has been elected president and Mr. N. H.

T. Myles secretary-treasurer. The office of the association is situated at Asbestos House, York Street, Sydney.

NEW INDUSTRIAL COUNCIL SOUGHT.

The recent conference of business executives at Geelong has carried a resolution to ask the Premier's Conference in August to consider establishing two new national councils.

One would be an industrial joint advisory council similar to those in England and New Zealand.

Representing workers and employers. It would advise the Government on industrial problems.

The other proposal is for a council for social studies along the lines of the C.S.I.R.O. It would report regularly on human factors to the Commonwealth and States and publish its findings.

Sir Herbert Gepp, president of the executives that too little attention was paid to study of the human aspect of industrial troubles.

MORE EMPLOYEES IN N.S.W.

Figures released by the New South Wales Government Statistician (Mr. S. R. Carver) show that N.S.W. employees (excluding rural) rose to a new peak of 1,015,400 during March—an increase of 45 per cent. over July, 1949.

Employees during February numbered 1,011,200.

The number of wage and salary earners in March was 736,700 men

(735,100 in February) and 278,700 women (276,100).

New Australians from Eastern Europe are entering Australian industry at the rate of 1,000 to 2,000 a month.

Apart from British migrants about 20,500 New Australians were employed in New South Wales by the end of March.

NEW ACQUISITION BY HOLEPROOF LTD.

Holeproof Ltd., one of the Commonwealth's leading hosiery manufacturers, recently acquired the main assets of Harcrest Pty. Ltd., Brunswick, Victoria, shirt and pyjama manufacturers. It is reported that expansion of this business, while extensive, is to centre on the production of specialised articles complementary to Holeproof's manufactures.

MORE LOOMS PURCHASED.

Bruck Mills Aust. Ltd., has purchased a further 320 looms from the United States. Two hundred and fifty were installed at the Company's plant some time ago and the Bruck Company is now producing about three million yards of material a year. Plans for expansion provide for an ultimate increase to 10 to 12 million yards.

TREATING TITANIUM DEPOSITS.

A pilot plant to treat black sand at Stradbroke Island, near the mouth of the Brisbane River, is being installed by Titanium and Zirconium Industries Pty. Ltd. The office of the company is c/o

Consolidated Zinc Corporation Ltd., 360 Collins Street, Melbourne.

PROBLEM OF RISING EQUIP- MENT COSTS.

Mr. J. McFarlane, acting chairman, said at the recent annual meeting in Sydney of Electricity Meter and Allied Industries Ltd., that the rising costs of plant and equipment replacement, as well as in the production of goods, is presenting a major problem to industry. "The spiral," he added, "is continuing its upward and disturbing trend. The Australian manufacturer is already confronted with competition from countries which have more or less fixed wage ceilings and longer working days. As a consequence, there is a danger of his products being replaced by imported goods. Australia will also be denied the export market she is seeking in the East and elsewhere. The local manufacturer may also find that rising costs have simply priced his goods out

"MANUFACTURER" INDEX

The index covering all issues of "The Australasian Manufacturer" from April 1, 1949, to March 31, 1950, is just off the press. It has been compiled for the use of libraries and for such industrial undertakings as regularly keep the journal on file. It constitutes a speedy and accurate means of locating articles which have appeared as Editorials, in "Around and About the Factory," in "Industrial Equipment News," in "After Business Hours," and in the general section. With subscribers requiring copies please make early application. They will be despatched immediately on request.

of his own market because of the inability of prospective purchasers to pay for them."

G.N. RAYMOND LTD. EXPAND ACTIVITIES.

Mr. G. N. Raymond, chairman, said at the recent annual meeting of G. N. Raymond Ltd., Melbourne, that the wide diversity of the company's products had enabled it to withstand the effects of variable trade. "During the past year," he added, "previous production levels have been exceeded, and sales have been at a record level both in value and volume. Orders continue to exceed the company's ability to supply."

Mr. Raymond announced that the plastics division is in process of reorganisation to meet a changed demand from the textile trade, pointing out that button manufacturers are the largest users of caseln in the form of sheet and circular blanks. "The company," he concluded, "is developing the preparation of specially prepared blanks, ready for insertion into automatic cutting and forming machines at the button makers' factories."

LEADING INDUSTRIALIST KNIGHTED.

In the latest Birthday Honours List, His Majesty the King conferred a knighthood on John S. Storey, one of Australia's leading industrialists. Sir John is managing director of Overseas Corporation (Aust.) Ltd., and of Repco Ltd., Melbourne. He is chairman of the Immigration Planning Council and also of the Defence War Production Planning Committee. During the recent war he was Director (Beaufort Division), of the Department of Air Production.

"The Manufacturer" extends its warmest congratulations to Sir John and, naturally, is highly gratified that his services to the manufacturing industries of the nation as well as to its war effort have been rewarded so signally.

FIRST AUSTRALIAN-BUILT PASSENGER CARGO SHIP.

The 4,600-ton motorship "Don-gara", the first passenger cargo ship to be built in Australia, was launched recently at the New-castle Dockyard. The new vessel will enter the Western Australian coastal trade between Fremantle and Broome.

This marks an important forward step in shipbuilding in the Commonwealth.

KNIGHTHOOD FOR SCIENTIST-INDUSTRIALIST.

The King recently bestowed a knighthood on Wilfred Russell Grimwade, a leading figure in Australian scientific and industrial circles. Sir Wilfred established the first local oxygen-making plant which ultimately led to the huge compressed gas industry of to-day. He was also instrumental in bringing out the first expert to demonstrate steel welding and cutting.

METALEX

EXTRUDED BRASS RODS AND SECTIONS



METALEX Brass Rod will help to solve your problems. Rounds, Hexagons and Squares available from stock. Shapes produced to specification with minimum delay.

METALEX

BRASS

&

BRONZE

High Speed Machining Brass

Hot Forging Brass

Riveting Brass

Cold Heading Brass Wire

Naval Brass

Manganese Bronze

Architectural Bronze

Nickel Silver

And to Specification

Let us help with
your problems

Expert technical service
readily available

METALEX PTY. LTD.

EDWARD STREET

EAST OAKLEIGH, VIC.

'Phone: UM 1053

Selling Agents:

NOYES BROS. (Melb.) LTD.
597 Lonsdale Street
MELBOURNE. Phone: MU 9031.

Adelaide, Hobart, Launceston,
Devonport, Perth,
Broken Hill.

NOYES BROS. (Sydney) LTD.
115 Clarence Street
SYDNEY. 'Phone: BX 1781.

Brisbane, Wollongong,
Mildura, Newcastle,
Mackay.

Reduce cost by returning scrap to us at best prices.

Our editorial representatives in each State makes regular calls on manufacturers, but if YOU wish to see some particular phase of your business given publicity, communicate immediately with the Editor, and he will arrange for a representative to call.



Around & About the FACTORY

A digest of new factory and plant construction, additions, alterations and improvements, and operating news of Australian industry.

Engineering Equipment for Wine Industry

Although the wine industry has a considerable degree of affinity with primary production, there are many respects in which it is a secondary (i.e., manufacturing) industry, and above and beyond that, it calls for much high-class engineering equipment.

The excellent workmanship and performance of wine industry machinery and appliances were attested by exhibits from leading Adelaide firms catering for this field set forth for public inspection at the Wine Fair at Tanunda

were shown in combination with a working process demonstrated by G. Gramp & Sons Ltd.

The display by Austral Sheet Metal Works Ltd. had an imposing background formed by sheets of polished stainless steel with interspersing strips of satin-finish stainless steel. In front of this gleaming array and on a low dais were set out the range of "A.S.M." measuring utensils from half gallon to six gallon size, together with lees samplers, jugs, etc.; and a bottling filter

sion on the Saturday afternoon from Nuriootpa to Tanunda.

Whitehill Ltd. had an impressive display along the centre of the hall, showing their comprehensive range of wine filters, electric wine pumps, must pumps, grape mills and other winery machinery. In a commanding position was a big Whitehill continuous wine press, well known throughout Australian wineries as being of particularly strong construction and large capacity, with minimum power required to drive it. A Whitehill portable electric wine pump was shown at work; this pump is designed for heavy duty and all classes of cellar work, incorporating latest ideas for easy and safe pumping and giving uniform output without jerking.

An interesting range of equipment shown by William Adams & Co. Ltd. included Kelly & Lewis centrifugal pumps, particularly a Mk. IV portable self-priming pumping unit constructed of aluminium alloys for lightness.

There was also a Worthington steam-driven boiler-feed and general service pump; and a Fisher & Porter "Flowraitor" used on supply lines to stills, etc., to give accurate indication of the flow of fluids. Pruning shears and other tools for the vineyard and other rural industries were also shown by this firm.

Mr. Charles Schahinger, of Mile End Coopers, with his usual enterprise and initiative, put on an excellent display showing casks in all stages of manufacture. He also had an interesting collection of historical curios of both the products and the tools of the cooper's art, including old-time sawing devices.

The cooperages of R. Babidge & Sons and A. P. John & Sons were also represented.

The Australian Wine Board had a series of photographs taken of the exhibits. The photographs of the Wine Fair included an extensive collection of pictures of all phases of the Festival air-mailed to London for publicity work there.



Picture of display by Austral Sheet Metal Works Ltd. in the industry equipment section of the Wine Fair, which was included in the 1950 Barossa Valley Vintage Festival in South Australia. Interspersed strips of satin-finish and polished stainless steel formed the background for a display of many items in which this company caters for wine industry requirements.

which was a new feature of the 1950 Barossa Valley Vintage Festival in South Australia. High quality of the materials used was clearly apparent.

Major firms represented in the industrial equipment section included Austral Sheet Metal Works Ltd., Whitehill Ltd., William Adams & Co. Ltd., Mile End Coopers (Mr. Charles Schahinger), R. Babidge & Sons, and A. P. John & Sons. Some items of plant from Austral Sheet Metal Works and Whitehill Ltd.

(made for Buring & Sobels Ltd.). A "Herakles" filter from A.S.M. (capacity 1,000 to 1,200 gallons an hour), working in combination with a Whitehill pump, formed a joint display with Gramp's exhibit. Two photograph cabinets with interior tube lighting contained pictures of Austral Sheet Metal Works storage vessels for both the wine and brewing industries, also culture tanks. Their stainless steel tanker recently delivered to Thos. Hardy & Sons Ltd. was a feature of the process-

Music While You Work

APRA — What It Is and What It Does

Ever since broadcasting began in Australia, there have been outcries over some phase or other of the activities of the Australasian Performing Rights Association. In recent years APRA has been criticised for its decision to exact licence fees for the use of broadcast music for commercial purposes known as "Music While You Work".

Last week an executive of the Association supplied us with some facts for factory owners, designed to show at least what APRA is and what it is doing for composers.

APRA is the Australian constituent of a world body known as the International Society of Composers and Authors. Delegates of this world body meet in conference once each year to consider the rules and regulations governing the domestic operation of each unit in its own country. The objective is to achieve unification and to set up findings in readiness for the Government-sponsored Copyright Convention which recommends similar legislation in relation to copyright in each country.

Briefly, APRA's function is to represent the interests of both local and overseas composers and publishers, it being recognised that both are entitled under copyright law to be compensated for the fruits of their labours. APRA is a co-operative society making no profits and distributing its net revenue in full to members who own copyright. These members pay no fees to the Association.

"The facts" said our informant "are that APRA owns the copyrights covering a large number of individual musical compositions. So numerous are these copyrights that it is more than likely that broadcasts from radio stations would include musical items with copyright vested in the Association."

"The Copyright Act, 1911, which is scheduled to the Copyright Act, 1912, defines 'copyright' of a musical work as meaning the right to perform the work in public. Section 2 provides that any person who, without the consent of the

(Turn to page 20.)

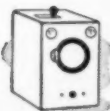
*R-O-K can
make those Parts!*



Bumper Bars for
"Chevrolet"



Pressings for
Concrete Mixers



Body Panels for
Washing Machines



Pressings for
Refrigerators



Clutch and Brake Pedals
for "Holden"

If your problems
are pressing
Consult the specialists



Certainly! . . . R-O-K can precision press
light, medium and heavy gauge components
in all metals, for all purposes. In fact, with
their modern press line, machine shop,
processing plant, drawing office and assem-
bly, R-O-K can handle your project from the
design and tooling stage to the finished
product.

PRECISION
PRESSED
Components



Associated with the "Owen
Group" of Companies.

Rubery Owen & Kemsley Pty. Ltd.

Telegraphic Address: "Ruberkem" Adelaide. Telephone: M 6426.

FIGURE NO
316
HP

**JOHN HIGH PRESSURE
PARALLEL SLIDE VALVE**

For use with STEAM up to
860 deg. Fah. at pressures
ranging from 450 lbs. to
750 lbs. per square inch.

JOHN

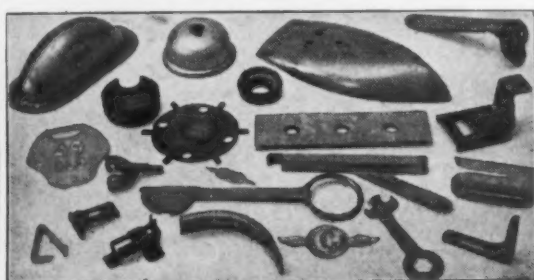
ILLUSTRATED above is
one of the large range
of JOHN Valves and
Fittings for use with
STEAM, WATER, OIL,
CHEMICAL, AIR and
GAS Services of high,
medium or low pressures
and temperatures.

FULL PARTICULARS
supplied on request

M.B. JOHN LIMITED
BALLARAT · VICTORIA
AUSTRALIA

TRADE  MARK

MAKERS OF THE LARGEST RANGE OF
VALVES AND FITTINGS IN AUSTRALIA



METAL STAMPINGS

TO ANY SPECIFICATION

YOUR ENQUIRIES ARE INVITED

CHAS. HANDFORD

"Craftsmen in Metal"

9-15 MARY STREET, BRISBANE.

Phones: B 4400, B 5006.

(Continued from page 18.)

owner, does anything which the Act confers upon the owner the sole right to do, shall be deemed to have infringed the copyright. Section 35 describes the performance in public to include "any acoustic representation of a work."

It seems clear, therefore, that the right of imposition of payment in the form of licence fees by the Australasian Association is in accord with the laws of copyright.

If performances of the kind under consideration were to be treated as private performances, a British Court ruled recently, "the employers of millions of work-people would be giving to their workers the fruits of the brains, skill, imagination and taste of the author . . . without any remuneration . . . and would be giving the

advantage of that work, taste and skill in obtaining increased or improved output".

In this and other cases APRA's claim to licence fees has been upheld, and it has been made clear that "Music While You Work" sessions are merely another use for copyright music and not a second tax on broadcast items.

For factories with over 100 employees the fees are calculated on the number of employees to whom the music is audible and the number of hours delay in which music is used. For a detailed list of fees including the special low rates for factories with up to 100 employees, application should be made to APRA, Box 4007, G.P.O., Sydney. (Phone BW 8493) or to the Melbourne representative, K. H. Mognie (Phone WM 6773).

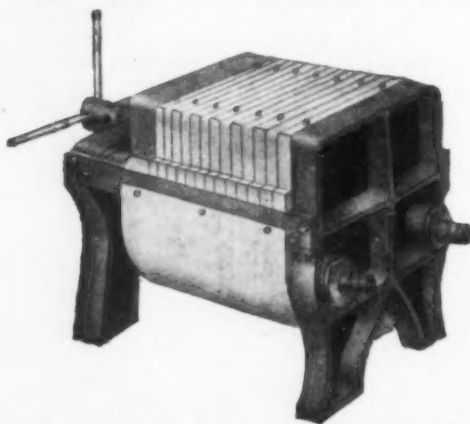
"Acidag" Pressure Leaf Filters

The "ACIDAG" Leaf Filter made by the W.J. Manufacturing Co. Pty. Ltd., of Mosman, N.S.W., was originally designed for the Classic Electroplating Supply Co., of Newtown, N.S.W., who, as distributors for the Udylite Bright Nickel Plating processes, considered existing types of filters available unsuitable for this solution.

This was due mainly, we understand, to the corrosive action of

It was also realised that the non-metallic interior construction would be suitable for any other type of plating solution in use at present and most foreseeable future developments.

The illustration on this page shows a No. 1 Filter. Largely non-metallic in construction these filters are made in three standard sizes. No. 1 minimum capacity approx. 600 gallons per hour, filter



This filter for plating solutions has a capacity of 600 gallons per hour.

the high chloride content incorporated in the Udylite Solution No. 31 to assist its high speed action, and the even faster solution 31H containing 32 ozs. of Nickel Chloride per gallon.

The Classic Electroplating Supply Co., therefore, required a filter and a pump through which the Udylite Solutions could be passed without coming into contact with any metal parts. The "ACIDAG" Rotary Seal Pump already fulfilled these requirements, and the "ACIDAG" Filter Press was constructed to maintain this feature.

area 9 sq. feet; No. 2 minimum capacity approx. 1,020 gallons per hour, filter area 14½ sq. feet; and No. 3 minimum capacity approx. 1,440 gallons per hour, filter area 18 sq. feet. The No. 1 filter, specially designed for filtering plating solutions and operating as a unit with a 1 inch Acidag Rotary Carbon Seal Pump, overcomes the necessity of frequent changes of filter cloths.

The pumping rate of the No. 1 Press strikes an ideal balance for most sizes of plating bath, but the

Friction Linings for EVERY industrial need

backed by FERODO RESEARCH

IN the range of Ferodo materials—woven or moulded, metallic or non-metallic—there are grades with the correct frictional and heat-resisting properties to give reliable service in any industrial application.

These linings have behind them not only half a century's specialized experience, but the research facilities of the Ferodo Test House at Chapel-le-Grith—one of the most completely equipped in the world.

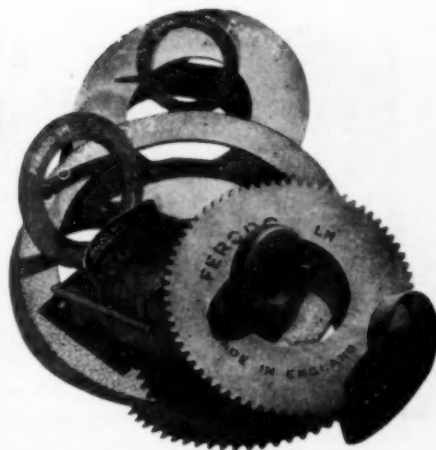
Here rigid testing goes hand in hand with constant research. Quality is maintained, standard materials are improved, special grades are developed. Brake and clutch mechanisms are studied and tested.

The resources of the Ferodo Test House are at the service of engineers all over the world, who are invited to regard it as their "research headquarters" and to consult the technical staff on any problem relating to the use of friction materials.

The Ferodo Test House is equipped with special apparatus for testing friction linings and brake and clutch mechanisms up to or far beyond their designed capacity, while all relevant data are measured and recorded.



A Member of the Turner and Newall Organization
Manufacturers: FERODO LIMITED, CHAPEL-LE-FRITH, ENGLAND



FERODO BRAKE AND CLUTCH LININGS for vehicular and industrial use

AUSTRALIAN DISTRIBUTORS—QUEENSLAND (BRISBANE): Philip Frankel Pty. Ltd., Elphinstone Pty. Ltd., Westcott Hazell Engineering and Steel Ltd., NEW SOUTH WALES (SYDNEY): Westcott Hazell and Co. Ltd., Westcott Hazell Engineering and Steel Ltd., VICTORIA (MELBOURNE): A. L. Campbell and Co. Ltd., Westcott Hazell Engineering and Steel Pty. Ltd., E. A. Martin and Co. Pty. Ltd., SOUTH AUSTRALIA (ADELAIDE): A. L. Campbell and Co. Pty. Ltd., Durston and Co. Ltd., Westcott Hazell Engineering and Steel Ltd., WESTERN AUSTRALIA (PERTH): William Adams and Co. Ltd.

No's. 2 and 3 are available for larger installations.
Further particulars may be ob-

tained from the distributors: Classic Electroplating Supply Co., 7 King Street, Newtown, N.S.W.

Square Framed Exhaust Fan Permits Easy Installation

There is a frequent need for clearing undesirable heat, smoke, fumes, odours and dust from factories and workshops or offices where the actual decision to install a fan has been long delayed by other more pressing innovations absorbing available labour.

For cases such as this the "Beaver" Exhaust Fan with its square frame offers the utmost convenience and economy of installation—a cost factor which should never be overlooked when purchasing exhaust fans or any industrial equipment for that matter.

Fitting easily against the wall, or in the wall, and flanged for attaching to a duct when necessary, the fan has a strong vibrationless stand supporting the motor and is fitted with 20" blades designed to give an output of 4,300 cubic feet per minute.

When used alone, these fans are capable of handling most problems and their installation in hot factories, or where unpleasant conditions prevail, is invariably followed by rises in production and better

working conditions generally. In offices where desk fans are inclined to blow papers about they are also valuable, ensuring a continuous flow of fresh air without any accompanying nuisance.

Where a considerable circulation of air is required necessitating the expulsion of stale air and its replacement with fresh, these fans may be installed in conjunction with Stromberg-Carlson Air-circulators. Each building layout requires its own particular arrangement and selection of ventilation units, and expert advice is always available on any ventilation problem by Warburton Franki (Melb.) Ltd., 380 Bourke Street, Melbourne, who carry a full range of this equipment.

In addition to their application in factories and stores, "Beaver" Exhaust Fans are used extensively in halls, theatres, churches, etc., which can be made more comfortable by their installation. In fact, many picture theatre proprietors have reported better results than with costly mechanical ventilating and air-conditioning systems.

Australian Indicators Pty. Ltd.

Reg. Office: 562 Spencer St., Melbourne
Telephone: FJ2377



- DIAL INDICATORS
- COMPARATORS
- UNIVERSAL TEST SETS
- PRECISION GEAR CUTTING

Agents:

N.S.W.: STANLEY F. COFFEY, 176 Day Street, Sydney. Phone: XM 5801.
S.A.: NEVILLE COLLINS LTD., 154 North Ter., Adelaide. Phone: C 3722.



YOU WANT TO KNOW . . . and the editors will gladly tell you . . . more about the inventions, materials, and processes mentioned on this page. Write to Box 1687, G.P.O., SYDNEY, enclosing a stamped, self-addressed envelope.

General Purpose Glass-working Lathe

A general-purpose glass-working lathe with a trunnion-supported straight bed for vertical or horizontal use has been produced by a British company. The machine, which is illustrated on this page, provides a swing of 22 in. in diameter over the bed. A cast-iron carriage supports a semi-circular gas manifold with 18 burners pointing towards the spindle axis; each burner is individually adjusted and locked in position by means of a set screw to give radii from 2½ in. to 7½ in. between spindle axis and burner tip. Spindle speeds are controlled by a handwheel at the front of the machine and are varied by means of a standard type of infinitely-variable gear over two ranges which can be selected by interchanging two sprockets at the head end, the ranges being 30 to 186 r.p.m. and 94 to 570 r.p.m. Glass components such as parts of cathode-ray tubes are held in the headstock and tailstock, which are brought together to enable a seal or joint to be made.

The trunnions of the bed are carried in 3½-in. diameter bearings at the top of two cast-iron legs cross-braced about 10 in. apart by 2-in. bolts to allow the bed to tilt and to provide a four-point support. The bed is cast in one piece, and is of flat section with side webs and cross bracing to suit the stresses at different angles of tilt; the bed ways are hand scraped, their inner faces being used to guide the headstock, tailstock and carriage. The headstock, tailstock, and burner carriages each have an apron carrying the respective operating handwheels, which have worms and pinions to engage a rack running along the front of the bed, an arrangement which ensures that the carriages are self-locking whatever the angle of tilt. The trunnions are spigoted into the sides and are fixed nearer the headstock end to give the

best working height in both positions.

The cast-iron headstock has hand-scraped sliding surfaces, and houses a spindle bored to a diameter of 3 in. and running in ballbearings; the spindle has a spigoted flange to carry the faceplate and chucks provided. A three-jaw self-centring chuck of 1 in. to 3 in. capacity, as well as



Glass-working lathe with trunnion supported bed, for vertical or horizontal use.

a 2½ in. diameter faceplate with spring-pressure pad to assist in holding the work, are normally supplied as part of the standard accessory equipment. The tailstock also has a cast-iron body with hand-scraped sliding surfaces and a spindle running in ballbearings. This spindle, however, has a quill giving a sensitive feed over a 2-in. range, controlled by a small handwheel operating one of two quill rods; these each have a bolted-on end-piece which is located in a groove around the

quill shaft. The quill also has a spigoted flange for chuck mounting. At their outer ends, the two quill rods are cross-linked and connected through a small coupling to a lever hinged from the base of the tailstock, the lever being connected by a roller chain to a compensating balance weight on two guide rods aligned parallel to the lathe axis from the lower part of the bed. The balance weight, which comes into action when the bed is used vertically, compensates for the weight of the tailstock and its accessories, and facilitates the traversing of the tailstock. The top of the burner carriage is machined flat and has a T-slot for clamping the burner supports and gas manifold, this having three inlet tubes with the taps and hoses.

Tilting of the bed from the horizontal to the vertical position and vice versa is effected by worm wheel and worm of a 60 to 1 ratio. The worm wheel is bolted to the bed at the rear of the machine, and engages with a worm supported in plain bearings secured to the rear leg, the worm being turned by the ratchet spanner provided. The headstock and tailstock spindles are driven at the same speed by a 1½-h.p. 440-volt, three-phase squirrel-cage motor with direct-on-line starting and a reversing switch, to give speeds of about 1,420 r.p.m. in either direction.

From the motor, the drive is

taken by V-belt to the infinitely-variable gear which is of a standard make incorporating a ring of ball-bearing steel running over the surfaces of four cones. Two of these are on the input shaft with their apex ends facing, and the other two are similarly arranged on the output shaft; one in each pair is fixed to its respective shaft, but the other two are cross-linked, and are adjusted by a handwheel to displace the ring laterally over the conical surfaces to give the speed ratios required.

An extension spindle from the gearbox leads to a 90-deg. bevel gear in a cast-iron box mounted between the trunnions, and the output shaft of the bevel leads through a multi-plate clutch to the high- and low-speed range sprockets, which are changed over when the alternative range is required. From these sprockets the drive is taken by chain to a main shaft running the length of the bed below the bed ways; roller chains from this shaft drive the headstock and tailstock spindles and are adjusted by eccentrically-mounted jockey sprockets. The clutch is operated by a lever at the front of the machine, and besides allowing for a steady take-up, also permits of inching for adjusting the work. The complete machine weighs about 17 cwt., and, when the bed is used horizontally, covers a floor space of about 6 ft. 3 in. long by 3 ft. 2 in. wide. [2484].

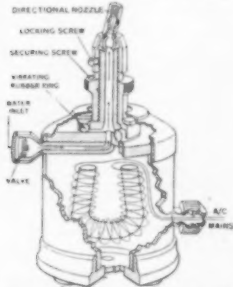
Fountain is Electromagnetic in Principle

The illustration shows diagrammatically a most interesting electrically-operated fountain. This can be used in modified form in the house, for advertising or display purposes or in fashions, aquariums, etc. These fountains are electromagnetic in principle and contain "u" shaped electro-magnets, which are connected to the normal a.c. electric

supply. These magnets attempt to draw down the nozzle portion of the fountain but this motion is opposed by a rubber ring (see illustration). The nozzle, therefore, oscillates rapidly in accordance with the periodicity of the electric supply. The upward motion of the nozzle sucks water up whilst the reverse motion cannot return it through the non-

return inlet valve. The water is thus constrained to form a spray which, at a periodicity of 50 or so cycles per second, forms a continuous stream.

The table models of this fountain take very little power in-



Diagrammatic view of the fountain, showing the electromagnetic principle of operation.

deed (just over 1½ watts or 1—h.p.), whilst the garden models 500

take about 12 to 15 watts and the statue model about 25 watts. The reason for the higher power of the statue model is that it has to push the water through a rubber tube and overcome the friction of the rubber tube as well as support the head of water.

All models when correctly installed are self-priming. They circulate the same water continuously without contamination and, owing to the extremely low power consumption, do not raise the temperature of the water appreciably. For decorative effects the table models are fitted with two coloured lamps which can be switched on as required to give a most striking illuminated effect. In this model the bowl is made of a transparent plastic which reduces both weight and the danger of bowl fracture in the case of accidental damage.

The height of the spray can be readily regulated by releasing the locking ring and screwing the nozzle in the required direction.

The manufacturers are at present developing other applications for these fountains. These include a model for use in chemical laboratories, as well as a very large pump working on similar principles. [2485].

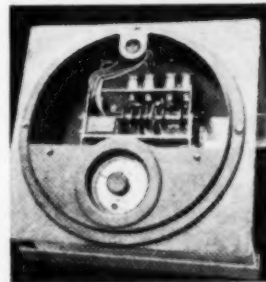
Cycle Controller for Hydraulic Presses

Another unit for automatically controlling moulding cycles is the self-contained controller, illustrated, recently introduced for use on hydraulic presses employing piston-type control valves. Once it has been set, the cycle, including one or two breathes, is identical for every moulding, thus eliminating faulty mouldings due to over-curing or under-curing.

The instrument consists of a circular case containing a cure cycle control clock adjustable from 0-10 minutes, and a camshaft driven by an electric motor. An air supply of at least 25 lb. p.s.i. is required. During the rotation of the camshaft the cams operate air valves, and the contact-operating discs control the time clock and camshaft motor. The air valves actuate small air cylinders to work the hydraulic piston valves of the press automatically.

As soon as the cure commences, the cure cycle clock comes into operation and the camshaft mo-

tor stops until the end of the set period, when it automatically re-



Cycle controller for hydraulic presses.

starts and the cure cycle clock resets. [2477].

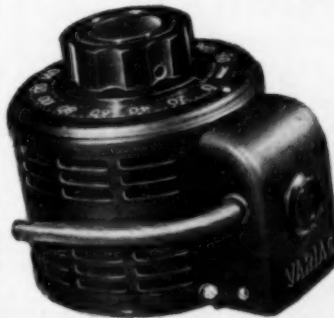
Corner Ribbon Loudspeaker Gives Realistic Sound Distribution

The development of a new high-quality corner ribbon loudspeaker was carried out against a background of measurement and subjective listening tests involving comparison between the original and the reproduced sound. In deciding on the final design, con-

siderations of naturalness and "presence," for which methods of measurement have not yet been evolved, were given due weight.

Essentially, the unit comprises a twin cone diaphragm loudspeaker for low frequencies and a horn-loaded ribbon diaphragm

At last— A "BABY" VARIAC Now Manufactured in Australia



500 VA
5" DIAM.

INSTANT ADJUSTMENT OF LINE VOLTAGE VARIATIONS.
for all accurate Testing and Calibration

For radio technicians—electrical engineers—professional photographers, this is good news these days of fluctuating line voltages! A small version of the 2 KVA



VariaC—from 240 v./50 cycles it will deliver any voltage from zero to 280 v., continuously variable with a smooth turn of the dial, to a limit of 500 VA. Early deliveries.

Weights only 7 lbs.
Socket outlet.
Moulded knob.
Rubber feet with insert.
Photo-engraved dial.
6 ft. 3-core cable.
Good deliveries at present.

Manufacturers and Distributors:

WARBURTON FRANKI LTD.

307-15 Kent Street, Sydney
380 Bourke Street, Melbourne 233 Elizabeth Street, Brisbane
Manufactured under licence for Hayward C. Parrish.
The 2 KVA VARIAC is available on extended delivery.



CARBOXY METHYL CELLULOSE

of interest to all industries

Carboxy Methyl Cellulose—CMC—is a water soluble cellulose derivative supplied as the sodium compound, technical or pharmaceutical grade, in high, medium, low and extra low viscosities.

CMC has unlimited possibilities as it possesses important merits of its own which enable it to supersede materials such as pectin, agar-agar, gelatin, casein and other compounds in certain of their applications.

Paints,
Laundries,
Insecticides,
Pharmaceuticals,
Cosmetics,
Tooth Pastes,
Wallpaper Glues,
Rubber,
Wax Polishes,
Shoe White,
Paper Coatings,
Foodstuffs.

From paints to foodstuffs—they all incorporate CMC to advantage.

Ask for detailed information with regard to your particular application.

SWIFT AND COMPANY LIMITED

26-30 CLARENCE ST., SYDNEY. BX1831

And at Melbourne, Brisbane, Adelaide and Perth. Also Wellington and Auckland, New Zealand.

MANUFACTURING ENGINEERS AND BRASS FOUNDERS

Brass and Steel Repetition Work. Bronze Bushings a Speciality.
Castings in Aluminium, Brass, Copper, Gunmetal,
Phosphor Bronze, etc.

A. J. MUNRO PTY. LTD.

22-26 Nicholson St., East Sydney. 'Phones: FA 1405, FA 5395.

for frequencies above 2000 c/s. The back radiation from the l.f. unit is modified by a two-stage acoustic filter and emanates from a vent at the bottom of the cabinet. Two stages are used to give a smooth downward extension of the low-frequency response without introducing complications in the region of 150-200 c/s.

The 0.00025 in.-thick aluminium ribbon diaphragm of the h.f. unit is loaded at the front by a multiple horn designed to give the optimum distribution both vertically and horizontally. The back radiation is directed towards the corner walls of the room and provides further extension of the sound source to enhance the realism of orchestra music. On speech the residual directional properties of the main cone predominate and give the appropriate effect of a point source.

The manner in which the apparent source adapts itself automatically to the frequency content of the original is said to be strikingly effective. Another outstanding quality of the performance is the transient response. One does not need to wait for loud and dramatic passages in the music to demonstrate this. It is there all the time, in the bowing attack of strings in pianissimo

passages and in other subtle ways that will be appreciated by those that have ears to hear. For instance, the difference in quality between a spherical and an elliptical reproducing point on high quality recordings is at once apparent.

The bass response is smooth, and judging from some organ recordings, effective down to frequencies of the order of 20 to 30 c/s. In the top register the character of surface noise is much less objectionable than usual, due no doubt to the effective damping of the ribbon and the absence of resonant colouration. The response has not been measured by the makers above 18 kc/s, but is believed to extend to 30 kc/s.

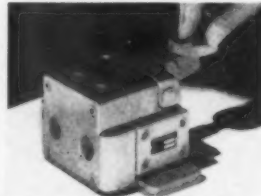
A cross-over network is included and the input impedance is 15 ohms. It is important that sustained single-tone inputs to the h.f. unit should not exceed a power of 1.5 watts, but on speech and music the power input to the loudspeaker as a whole can be raised to 12 watts. Dimensions of the corner ribbon loudspeaker are: height, 34 in.; maximum radius, 24 in. The high-frequency horn is segmented to give improved sound distribution. [2472].

Fast Cycling Air Valve is Hand Controlled

A new, fast cycling type of hand operated valve which provides 4-way directional air control, provides what approximates

needed to the control knob lever, supplies the force to move the piston operated main valve. Valve action is almost instantaneous, thereby permitting faster operating cycles with less loss of time in operating a valve.

The valve features a reciprocating, packless, self-lapping main valve disc. A light compression spring raises the control knob when the hand is removed. The valve is now available in 1 in. and 1/2 in. sizes for use with air line pressures of from 25 to 150 lbs. "In" and "out" air line connections are located in the top of the valve with pipe connections to air cylinder in the back. Where it is desirable to provide remote control or simplify piping connections, the control knob can be located on the end of an extended rod connected to the operating lever. The valve, itself, can be mounted in any position that keeps the valve piston in a horizontal plane. [2457].



Fast Cycling Air Valve.

"push-button" control with physical effort reduced to a minimum.

Light hand pressure depresses the control knob 1/2 in. to operate the valve. Air line pressure, acting through a pilot control con-

"DELORO STELLITE 100"



CUTTING TOOLS

In Cutting Tools it's the feed that counts. Increased feeds remove metal faster. Deloro Stellite is designed for heavy feeds at safe speeds. In an established range of machining, it is preferred to any other type of tool.

Deloro Stellite is hard at red heat and is resistant to wear, erosion and corrosion.

Brenco Pty. Ltd., sole Australian distributors, have a technical staff ready to assist you in all technical problems and to help you in the use and maintenance of Deloro Tools.

Outwears steel up to 25 times



Distributed throughout
Australia solely by

BRENCO Pty. Ltd.

119 Ballarat Rd., Footscray - Victoria - Telephone: MW 3471, 1201

280 Castlereagh St., Sydney - MA 1547 3796

CONTRACTORS TO AUSTRALIAN AND NEW ZEALAND GOVERNMENTS

DIAMONDS

In buying JULES JORIS Diamond tools, you are obtaining the knowledge and experience of three generations of Diamond experts

Diamond & Boart Products (Australia) Pty. Ltd. in conjunction with JULES JORIS head office, 245-247 Pitt Street, Sydney, the largest importers of diamonds in Australia, offer you a full range of:

PRECISION MADE

- | | |
|--------------------------------|--|
| ● DIAMOND THREADGRINDING TOOLS | ● DIAMOND EMERY WHEEL DRESSERS |
| ● DIAMOND LATHE TOOLS | ● DIAMOND BAKELITE IMPREGNATED AND METAL HONES |
| ● DIAMOND BORING TOOLS | ● DIAMOND BAKELITE AND METAL LAPPING WHEELS |
| ● DIAMOND HARDNESS TESTERS | ● DIAMOND WIRE DRAWING DIES |
| ● DIAMOND RADIUS DRESSERS | ● DIAMOND DUST |
| ● DIAMOND TREPANNING TOOLS | ● DIAMOND GLASS CUTTERS AND OPTICAL DRILLS |

SPECIAL DIAMOND TOOLS MADE TO YOUR REQUIREMENTS

For expert advice on Diamond matters and service, consult:

DIAMOND & BOART PRODUCTS (AUSTRALIA) PTY. LTD.

14-16 Parramatta Road, STANMORE, N.S.W. 'Phone: LA 3842.

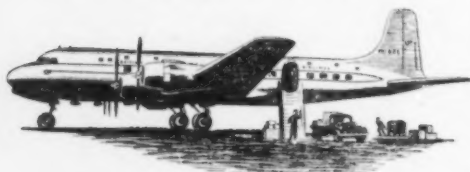
DIAMOND & BOART PRODUCTS (VICTORIA) PTY. LTD.

405 Collins Street, MELBOURNE, VICTORIA. 'Phone: MU 3956.

Agents—S.A.: Mr. Max Chilton, Baptist Buildings, Flinders Street, ADEL AIDE. 'Phone: Central 5116. W.A.: Western Machinery Co. Pty. Ltd., 494 Murray Street, PERTH. 'Phone: BA 2495.

FASTEST

Air Cargo Service to North America



Use BCPA's Air Cargo Service and save weeks' shipping time. In BCPA's fleet of 300 m.p.h. DC-6A Airliners it's only 29 flying hours* across the Pacific. From San Francisco or Vancouver, immediate transshipments of cargo to any part of U.S.A., Canada, South America, England or Europe will be gladly arranged.

*Actual elapsed time with ground stops is 42 hours to San Francisco.

- ★ Refrigeration facilities for perishables "en route."
- ★ All "on forwarding" charges payable in local currency, charges collect facilities also available.
- ★ Insurance for all shipments readily arranged.

Write or 'phone your local forwarding agent or BCPA's general sales agents: Trans - Australia Air Lines, offices all major cities. BCPA Air Cargo Office: 22-26 Elizabeth Street, Sydney.

BCPA

SYDNEY • FIJI • CANTON ISLAND •
HONOLULU • SAN FRANCISCO •
VANCOUVER • Immediate connections
to London via U.S.A. or Canada.

British Commonwealth Pacific Airlines Ltd.

B.C.A. 22-19

AUSTRALIA'S LARGEST MANUFACTURERS OF
"TRUGRADE BRAND"

COTTON WASTE
STOCKINETTE and BEEF WRAPS
CLEANING CLOTH MOPS
DORSET and SPONGE CLOTHS

Your enquiries appreciated

MCLEOD BOLTON & CO. PTY. LIMITED
"Trugrade House," 22-26 MANDIBLE STREET, ALEXANDRIA, N.S.W.
Factories and Branches all States of Australia

Improved Automatic Checking Recorder

An improved automatic checking recorder for obtaining permanent chart records of involute tooth forms, tooth spacing, leads, contours, thread forms, etc., has been announced by an overseas firm. Designed primarily as an accessory for gear checking equipment, the recorder has many other useful applications. Up to 0.002 in. of error, both plus and minus, can be recorded automatically across the chart of this instrument.

Outstanding among the improvements are a selective two-speed chart drive and a new standardized interchangeable precision electronic gauge head. The head mounts in tandem with the indicator on a checker. Either one head can be used and transferred from one checker to another or all checkers may be equipped with identical gauge heads for plugging into the recorder as desired.

Accuracy of the new checking recorder has been improved by the all-electric 2-speed drive and improved pen mechanism. Pen movement is 1/8 in. per 0.0001 in. of checker indicator finger movement. Chart drives give 1 in. of travel for either 2 deg. or 1 deg. of work rotation. The electronic amplifier is designed to take care of normal voltage changes so

that such fluctuations do not affect the instrument's accuracy.

Setting up the instrument when switching from one type of checking operation to another is extremely simple with the new design. No recorder adjustments are required when plugging in the lead from an electronic gauge head mounted on a different checker. The simplified controls also help reduce the set-up time to a minimum and cut down chances of error by the operator.

Other new features of the new unit include a convenient compartment in the base of the recorder for storing spare rolls, inks, ink pad, etc.; a specially designed hand stamp for indicating what filing data should be filled in on each completed chart; and the use of a glossy-white interior finish which insures adequate lighting of all interior parts in case it should become necessary to service the recorder. A graduated handwheel is provided for manual operation when automatic operation is not desired.

The recorder is of rugged construction yet is completely portable, being mounted on rubber wheels for added protection when rolling it from one location to another. [2482].

Variable-Speed Drive Made for Dressing Frame

A new attachment for driving and controlling dressing frames for woollen and worsted yarns has recently been announced.

This device is bolted to an existing dressing frame. It eliminates overhead drives and allows a variable-speed ratio of 2 to 1. An adjustable brake brings the reel to a quick easy stop in any desired distance. Thus the operator knows at all times where a broken end is located.

Yarn breakage is said to be greatly reduced because of the

easy, gentle start and stop provided by the drive. It is also claimed that much greater yarn speeds are possible because of the flexibility of the unit. [2438].

**DO YOU USE OUR
INQUIRY DEPARTMENT
SEE PAGE 36**

"ACEWELD"

Welding & Cutting Equipment

(OXY-ACETYLENE)

UNEQUALLED FOR
QUALITY
EFFICIENCY
DEPENDABILITY

Repairs to All Makes of Equipment

J. N. HANBY

Proprietor

91 HORNBY STREET, PRAHRAN,
VICTORIA. Phone: LA 4767.

INDUSTRIAL PLANT INSTALLATIONS

Specialising in
STAINLESS STEEL & MILD STEEL EQUIPMENT
PRESSURE VESSELS . . . TANKS . . . STILLs

Installation of
HIGH PRESSURE & LOW PRESSURE PIPE LINES



A typical pipe installation by I.P.I. Pty. Ltd. at the Matraville Refinery of
Bitumen & Oil Refineries (Australia) Ltd.



30 O'RIORDAN STREET, ALEXANDRIA, N.S.W.

'Phone : MX 3620

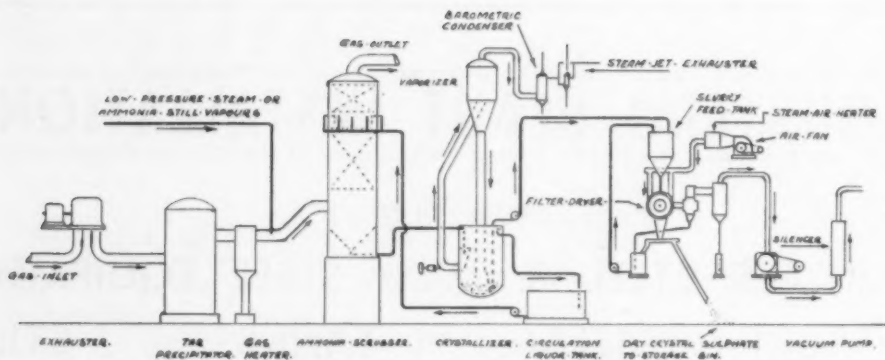


Fig. 1. Schematic diagram of Kembla's new crystal sulphate production process showing progressive stages of the process beginning at left with the entry of the gas from the coke ovens.

New Crystal Ammonium Sulphate Plant at A.I.S. Kembla Works

Believed to be the first of its type in the southern hemisphere, the new crystal sulphate plant installed by Australian Iron & Steel Ltd. at the Kembla Works marks another steel industry advance. Ammonium sulphate is an important fertiliser and is one of several vital chemicals obtained as a by-product of coke oven operation.

COMPARED with the product of the old saturator process, the crystals from the new plant are dustless, freer-running, less bulky, and when stored they do not pack together—important considerations to the man on the land. A.I.S. ammonium sulphate goes to orchardists in the Leeton area, N.S.W.; the Queensland sugar industry, and fertiliser companies for the manufacture of mixed fertilisers.

The Newcastle and Kembla blast furnaces requirements of coke are obtained from the Works' respective by-product coke oven batteries. The term "by-product" indicates that in the heating process, in the course of which the powdered coal is transformed into coke,

certain volatile matters are distilled from the coal.

Firstly, portion of the nitrogen content of the coal being coked is changed into ammonia gas (i.e., NH_3 nitrogen plus three parts of hydrogen).

For many years the standard

method of removing the ammonia from the gas (in the form of ammonium sulphate) has been by the saturator process. In this process, the gas from the coke ovens is bubbled through a sulphate liquor incorporating about four per cent. sulphuric acid and contained in large lead-lined or lead-and-brick-lined vessels.

The ammonia in the gas and the acid in the liquor unite to form ammonium sulphate which is recovered in the form of the well-known white crystals. Chemically stated, this process reads:—



One of the inherent weaknesses of the process has been the difficulty found in regularly making good quality crystals free from dust. To improve the saturator process, various devices such as



Fig. 2. Top section of the 39 ft. high ammonia scrubber tower at the A.I.S. Kembla Works crystal sulphate plant. Entry points of four of the lower's seven liquor sprays are visible.

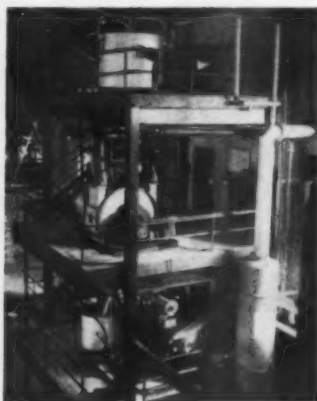


Fig. 4. The drying section of the plant. On the top floor is the slurry feed hopper, with the air fan and air heater in the background. The filter tank is located on the next floor, with the filtrate tank and 3,500 cub. ft. per minute vacuum pump on the bottom floor.

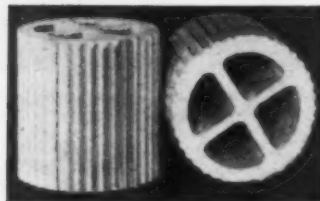


Fig. 3. Specimens of the special ceramic tiles (approximately four inches in diameter), perforated as shown (right), with which the lower section of the scrubber tower is packed.

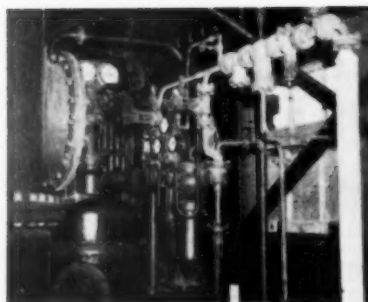


Fig. 6. Showing details of the vaporiser barometric condenser and steam jet exhauster installation.

mechanical and air agitators, and the use of such chemicals as phosphates and oxalic acid have been tried with varying success.

In 1941, the Wilputte Coke Ovens Corporation developed a new ammonium sulphate recovery method which has been called the "crystal" sulphate process. This method combines two well-tried units—the absorbing tower or scrubber, and the "Krystal" evaporation and crystallising units.

In utilising these two units the process of ammonium sulphate recovery was split into two stages, thereby giving excellent control of crystal quality and eliminating the fine dust typical of the saturator process. By contrast in the latter process the absorption of the ammonia from the gas and the formation of the crystals was done in one turbulent unit, in which fine control of operation was difficult.

The original saturator-type ammonium sulphate recovery plant at Australian Iron & Steel Ltd. Kembla Works was built in 1937 to treat the gas from a battery of 72 coke ovens. This plant consisted of two lead-and-brick-lined saturators, two Fletcher centrifuges and a Wilton drier, together with bagging and storage equipment.

The comprehensive scheme of plant development at the A.I.S.



The 50-ton crystal sulphate storage bin from which the sulphate is bagged.

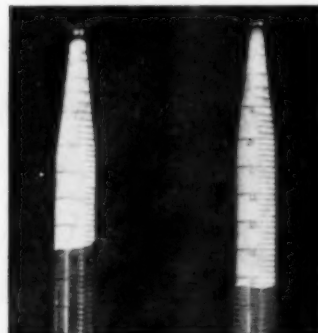
Kembla Works includes the erection of 48 additional coke ovens, and to handle the by-products recovery from the increased volume of gas, it was decided to install a Wilputte ammonium sulphate crystal plant.

The new plant will give the following benefits:—

1. Production of ammonium sulphate crystals of large and uniform size which will not "cake" during storage, and, therefore, will have the free running qualities preferred by the user.

The following comparative table indicates the measure of improvement in crystal size obtained by use of the new plant.

Screen Size	Sulphate from Crystal Plant
On 16 meshes per inch	45.5%
On 30 meshes per inch	46.0%
On 60 meshes per inch	8.3%
Thru 60 meshes per inch	0.2%



Measuring glasses containing equal weights of sulphate crystals (at left, product of the saturator process, and at right the crystal process), demonstrate the saving in bulk obtained by the latter process.

degrees C. before it enters the scrubber tower. The heating is aided by the addition of low pressure steam which is blown directly into the gas itself, and gives it to the required degree of saturation.

The scrubber (see Fig. 2), is a lead-lined mild steel cylinder 9 ft. 6 in. in diameter and 39 ft. 2 in. high. It comprises two sections, each packed with specially-shaped ceramic tiles (see Fig. 3), the bottom or wet section containing 11 ft. 4 in. of tile packing. The acid solution of ammonium sulphate in water (3-4% sulphuric acid) is sprayed over the tiles of the wet section by seven monel sprays. In the dry section above the sprays, there is 4 ft. of dry packing which removes any acid liquor carried by the rising gas.

The heat of the gas, together with the heat developed by the reaction between the ammonia and sulphuric acid, raises the temperature of the acid liquor leaving the scrubber to about 55 degrees C. The liquor overflows through a seal to a rubber-lined suspension tank, 8 ft. 6 in. wide and 18 ft. 6 in. deep, of the crystalliser unit. A turbine-driven axial flow pump circulates the liquor from the suspension tank to the evaporator

Sulphate from Saturators.

On 16 meshes per inch	8.5%
On 30 meshes per inch	1.2%
On 60 meshes per inch	71.7%
Thru 60 meshes per inch	26.6%

2. There is a high loss of pressure during the passage of the gas through the saturator as used in the old process. In the new plant, the gas passes through a scrubber tower, instead of the saturator, with only a small drop in pressure. Thus the gas handling capacity of the exhauster is increased with a consequent saving in steam consumption.

3. The crystal process is automatic in operation.

4. The new plant requires less floor space.

In the crystal process (see Fig. 1), gas generated by the coke ovens is pumped by turbine exhausters through the electrostatic tar precipitators (which remove the gas' tar content). Thence the gas travels to the pre-heater, which raises the gas' temperature to 50

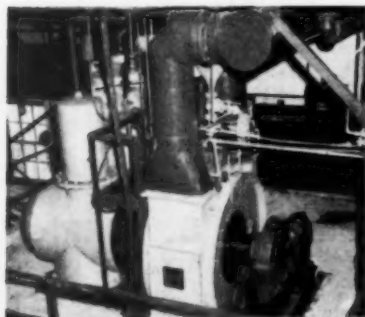
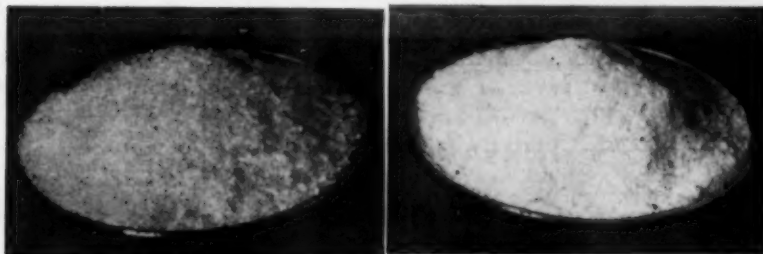


Fig. 5. A close-up of the Elmes drier.

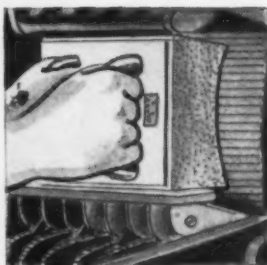


The tray of dust-free sulphate crystals illustrated at left was obtained from the new crystal plant at the A.I.S. Kembla Works. The better quality of this product is evident when it is compared with the tray of ammonium sulphate (right) obtained by the saturator process.

Used the World Over... **MARTINDALE** MAINTENANCE EQUIPMENT...

.COMMSTONES

Designed for turning and truing commutators of all sizes without removing the armature. Cuts copper, brass and steel without clogging—edges of every bar left clean—no dragging of copper. Saves 75% of the time and cost of turning the commutator in a lathe. Gives longer life to motors and keeps down maintenance costs. Many sizes in stock. Available in two grades—Coarse for general cutting—Fine for Finishing. Thousands of regular users all over the world.



.SUPER BLOWERS

The most efficient, powerful, lightweight blower ever built. Fitted with ball bearings and full 1 H.P. 230 Volt universal motor. Suitable for blowing out motors and all types of machines. Velocity of air is 312 feet per second, or 212 miles per hour. Discharges over 60 cubic feet of free air per minute.

FOR COMPLETE INFORMATION, CONTACT

WARBURTON FRANKI LTD. (MELB.)
380 BOURKE ST., MELBOURNE, C.1.
TELEPHONE: MU 6355 (8 LINES)

ALSO 207 KENT STREET, SYDNEY, and 223 ELIZABETH STREET, BRISBANE.

SPECIALISTS IN
AUTOMATIC AND SEMI-AUTOMATIC

— **THREADED** —
— **PLASTIC MOULDINGS** —

CUSTOM MOULDERS OF SMALL COMPONENTS

PELLETING FOR THE TRADE—1 1/2 in.-2 1/4 in. DIAMETER

ADAMS & WALKER

Cnr. LAYTON and HAMPSHIRE STS., CAMPERDOWN, N.S.W. LA 2941.

unit 37 ft. above. In the evaporator a high vacuum, 28 in. of mercury, is applied, and the sensible heat of the liquor causes it to boil under this vacuum. This evaporation, or boiling, causes a cooling of the liquor to take place and super-saturates it with sulphate of ammonia. The super-saturated liquor returns through a 22 in. rubber-lined tail pipe to the suspension tank, where a bed of crystals is maintained in suspension. The super-saturation of the liquor is removed on these crystals which thereby grow in size. Their actual size is controllable by the quantity of crystals maintained in the suspension tank and the rate of circulation from the tank to the vaporiser.

The vaporiser is a conical-shaped vessel with the bottom portion made of stainless steel and the upper portion of rubber-lined mild steel. The vacuum is generated by two units, a barometric condenser where a salt water jet condenses the boiling vapours leaving the evaporator, and a two-stage steam jet exhausting unit, with a fresh water inter-condenser, which removes incondensable vapours (see Fig. 6).

Liquor from the suspension tank overflows to an 8,000-gallon, lead-lined circulation tank. This liquor is a saturated solution of ammonium sulphate in water and 2-3 per cent. sulphuric acid. It is conditioned in the circulation tank by the addition of 75 per cent. sulphuric acid to replace the acidity lost by the absorption of the ammonia in the scrubber. Water is added to dissolve any sulphate carried over from the suspension tank, and to ensure that the liquor does not become super-saturated in its passage through the scrubber. Thus sulphate deposits are avoided in this unit.

Two electrically-driven pumps—one a spare—are provided to pump the acid liquor from the circulation tank to the scrubber sprays, up to 300 gallons per minute being circulated. The rate of circulation is adjusted to reduce the acidity of the liquor about 1 per cent. in its passage through the scrubber.

The larger sulphate crystals drop to the bottom of the suspension tank, and are removed by a slurry pump which delivers them into a stainless steel slurry feed hopper which feeds the Elmco drier (see Fig. 5). Excess liquor overflows from the feed hopper back to the circulation tank.

From the feed hopper the settled crystals gravitate as a crystal slurry of about 40-50 per cent. solids through valves and a half-inch feed nozzle on to the drier screens. One of these valves is operated by a solenoid which automatically shuts off the feed of slurry in the event of electrical failure of any of the drier units. The system is thus safeguarded against a deluge of wet slurry.

The Elmco drier is made of monel metal throughout, and, in one continuous unit, performs the functions previously carried out by

van GELDER PULVERISING MACHINERY

The name van GELDER has attained pre-eminence in the Milling Engineering field because of the outstanding efficiency and high standard of workmanship it represents.

Enquiries are invited for Pulverising Machinery of every description.

SPECIALISTS in the manufacture of PATENT SECTION FILTER DUST COLLECTORS, AIR ASPIRATING PULVERISERS (Single and Duplex Type), MILLING AND MIXING MACHINERY, Etc., Etc.

**J. P. van GELDER & Co.
PTY. LTD.**

66 Bay Street, Sydney

Cable Address: "Attrition."

Phone: MA 9364.

INTERSTATE AGENTS:
VICTORIA AND TASMANIA:
Gibson, Battle (Melb.) Pty. Ltd.,
54 William St., Melbourne.

SOUTH AUSTRALIA:
Pascoe & Co. Ltd.,
282 Port Road, Woodville.

Manufacturing Engineers

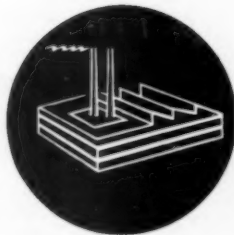
Automatic and Capstan
Turning, Milling, Drilling,
Cutter Grinding

GENERAL MACHINING
AND ASSEMBLY

**W. B. STEEN
PTY. LTD.**

129 Palmer St., Richmond, Vic.
Private Phone: XY 1603
For Precision and Service

SANTOMERSE N^o 1



industrial detergents

household cleaners



QUICK FACTS ABOUT SANTOMERSE NO. 1

1. *Speeds and improves cleaning by first making water wetter so that it spreads faster and penetrates deeper.*
2. *Quickly separates and removes imbedded or attached soil, breaks it up and keeps it in suspension so it cannot be re-deposited.*
3. *Functions effectively in hard or soft water... in acid or alkaline... hot or cold solutions.*
4. *Produces instant lather or foam in water solutions under all conditions.*
5. *Prevents formation of insoluble curds in hard water.*

Only small quantities of Monsanto's all-purpose detergent, Santomerse No. 1, are required to produce thorough wetting out, dispersing, emulsifying, penetrating and cleaning action. It is free-flowing, can be easily blended with other materials, and rinses off and out, fast and completely. Santomerse No. 1 can profitably be used in an endless variety of applications and is supplied as a drum dried powder for formulating into industrial detergents and household cleaners. For specific information about the uses you can make of Santomerse No. 1, write today to:—

MONSANTO CHEMICALS (AUSTRALIA) LIMITED
(Head Office) Somerville Road, Braybrook, Victoria, servicing Victoria, South Australia, and Tasmania

INTERSTATE SALES OFFICES:
New South Wales, Queensland

MONSANTO AGENTS:
Western Australia, New Zealand



HOUSEHOLD CLEANERS

HOUSEHOLD WASHING

LAUNDRIES

DISH WASHING

FRUIT & VEGETABLE
WASHING

MILK BOTTLE CLEANING

DAIRY EQUIPMENT
CLEANING

AUTOMOBILE CLEANING

METAL CLEANING

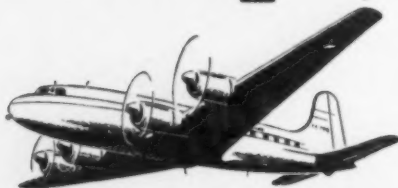
LEATHER PROCESSING

COLD WATER PAINT
MANUFACTURE

TEXTILE PROCESSING

S E R V I N G I N D U S T R Y . . . W H I C H S E R V E S M A N K I N D

Take a Canadian Pacific Comfort Cruise across the Pacific



To UNITED STATES • CANADA and UNITED KINGDOM



SYDNEY TO SAN
FRANCISCO AND
ALL PACIFIC COAST
POINTS

£A.265 8/- SINGLE
£A.477 14/- RETURN

SYDNEY TO U.K.
£A.325 SINGLE
£A.585 RETURN

- PRESSURISED 4-engined "Empress" Airliners
- Luxurious "Lounge" reclining chairs
- Excellent food — unequalled service
- Sleep ashore overnight at Fiji and Honolulu as the guest of Canadian Pacific
- Stop-over at Honolulu if desired
- Fifteen dollars provided at New York for through passengers to U.K.

For further details, apply Canadian Pacific Railway Company, or Union Steam Ship Co. (General Agents), 247 George Street, Sydney, and 59 William Street, Melbourne, or any authorised Tourist Agency.

Canadian Pacific AIRLINES

"THE WINGS OF THE WORLD'S GREATEST TRAVEL SYSTEM"
Canadian Pacific Air Lines Limited — incorporated in Canada

FOUNDRIY for all types of Castings in IRON, BRASS, FACINGS and STEEL INDUSTRIAL in all Grades of FLAKE and AIR- GRAPHITE FLOATED VOLCLAY :: BENTONITE

STOCKS CARRIED BY AGENTS:—VIC.: Gilbert Lodge & Co. Ltd., 3-9 Hanna Street, South Melbourne, QLD.: Underhill, Day & Co., Ltd., Queen Street, Brisbane, S.A.: E. Trelliving, Light Square, Adelaide, W.A.: Atkins (W.A.) Ltd., 394 Hay Street, Perth, N.Z.: Gilbert, Lodge & Co. Ltd., Routh's Buildings, 142 Featherstone Street, Wellington, N.Z.

JAMES CUMMING & SONS
FARRAMAR ROAD, AUBURN, N.S.W. Phone: UX 7007.

(Continued from page 30.)

the centrifuges and Wilton drier in the saturator process. It consists of a drum four ft. in diameter by 15 in. wide, lined with monel metal woven screens—the outer containing twelve meshes to the linear inch. As the drum slowly revolves, the crystals flowing from the slurry feed hopper form a uniform cake, about 1½ in. deep, on the screen as they run from the feed nozzle over a distributing weir. A variable speed drive turns the drum one revolution in one to four minutes.

A Roots-Connersville vacuum pump with a capacity of 3,500 cub. ft. per minute applies a vacuum (1½ to 2 in. of mercury) to the inner portion of the drum, and sucks hot air (125-145 degrees C.) through the crystals. The hot air is supplied by a fan blowing air through a tubular steam heater (see Fig. 4).

Water sprays and ammoniacal liquor sprays wash and neutralise the crystals before they enter the hot air zone of the drier. The dried crystals, removed by a blade set very close to the screen, discharge into a reversible screw conveyor. This delivers them to a glass-lined chute which feeds through an elevator into the 50-ton storage bin of the original plant.

The acid liquor removed from the crystals by the drier is sucked through tubes in the trunnion and trapped into a filtrate tank. Thence it is pumped back to the slurry feed hopper. The screw conveyor in reverse also discharges into this filtrate tank, thus enabling sulphate, that is wet or otherwise unsatisfactory, to be kept away from the storage bin.

All pumps are made of Worthite, an alloy of nickel, chromium and iron, with small quantities of molybdenum and silicon. This alloy is highly resistant to the abrasion of the sulphate and corrosion by the acid. Pipe lines throughout are rubber-lined, although in the case of pipes of smaller diameters, acid-resisting rubber hose is used instead of rubber-lined metal. Valves in contact with the acid solution are of monel metal, the larger valves (six in.) being of the Saunders-type with acid-resisting rubber diaphragms.

The scrubber operates continuously removing the ammonia from the gas; but every four or five days the system is stripped of crystals, and some 2,500 gallons of water and acid are added to the circulation tank. This dissolves any accretions of sulphate-rock salt—in the system. The drier system, on the other hand, operates intermittently as the slurry feed hopper fills and empties. Unfortunately, owing to the coal shortage, it has not been possible to test the plant on more than half capacity to date.

Bagging and stacking of the sulphate is carried out on day work only. An interesting development in this connection is that the large, free-running crystals of the new

"PORTO-VAC" Industrial Floor Scrubbing and Polishing Machines and Vacuum Cleaners "VORTICLONE" Dust Collectors and Separators

Manufactured and Distributed
by

**G. T. McONIE
& COMPANY**
217 GEORGE STREET
SYDNEY
Phone: BW 4755



General Engravers

- ★ MACHINE ENGRAVING ★ ELECTROPLATING
- ★ BADGES ★ MEMORIAL TABLETS
- ★ BUILDING PLATES ★ METAL STAMPINGS
- ★ NAMEPLATES ★ STREET SIGNS

ENR THE BOULEVARDE & THE BROADWAY
PUNGBOWL, N.S.W.

WELDON HARDWARE



Manufactured by
W. H. WELLS PTY. LTD.
127-135 Abbotford St., Nth. Melb.

Interstate Representatives:
N.S.W., Qld. & N.Z.: Essex R. Pict
Pty. Ltd., 222 Clarence St., Sydney.
South Australia: Wm. C. Keany, 141
Rundle St., Adelaide. Western Aus-
tralia: Associated Distributors, 747
Hay St., Perth.

IMPORTERS OF ANILINE DYES DRY COLOURS, OXIDES CEMENT COLOURS WHITING, ALUMINIUM AND BRONZE POWDERS

HODGSONS DYE
AGENCIES PTY. LIMITED
208 Sussex St., Sydney, N.S.W.
Seakist House, Downie St.,
off 534 Flinders St., Melbourne.
Maritime Bldg., Brisbane, Qld.
Wellington, N.Z.



**SUPPLY SOURCE OF ENGINE MANUFACTURERS
THROUGHOUT THE EMPIRE**

Empire-wide suppliers of the following accessories for all types of Automobiles, Commercial vehicles, Tractors, Stationary units, and all other engines, both petrol and diesel:

PISTONS — PISTON RINGS — CYLINDER LINERS OF ALL TYPES AND SIZES

VALVE GUIDES — VALVE SEAT INSERTS — CHILL FACE TAPPETS — CENTRIFUGAL CASTINGS —
CAST IRON BAR

BRICO AUSTRALIA PTY. LTD.

ASSOCIATE COMPANY

ASSOCIATED ENGINEERING HOLDINGS LTD., ENGLAND

British Piston Ring Co. Ltd.

Hepworth & Grandage Ltd.
And Subsidiaries.

Wellworthy Piston Rings Ltd.

MANUFACTURING ENGINEERS

COMPRESSION MOULDERS, TOOL AND DIE MAKERS,
PRESS WORK, Etc.

ACME ENGINEERING CO.
DREWERY LANE, MELBOURNE. Cent. 2594.

Industrial Diamonds GUTWIRTH & SONS PTY. LTD.

368 Collins Street, Melbourne
P.O. Box 980, G.P.O. Tel.: MU 5118

(Continued from page 32.)

process occupy so much less space than the saturator sulphate that the number of bags to the ton has been reduced from fourteen to twelve.

MEAT BY-PRODUCTS.

NEW METHODS OF PROCESSING.

Pigs' hooves, bacon rinds, beef bones, and other parts of animals not ordinarily used for food are being put to many new uses by processors in the United States. They also are developing new methods for processing and preserving meat and its by-products.

In its laboratories in Chicago, in the State of Illinois, one of the largest meat firms in the U.S.A., has made a food product from bacon rinds. The rinds are French-fried and are said to taste something like potato chips. "The Wall Street Journal" reports. They are now being test-marketed in Chicago.

Pigs' hooves are ground into a fine powder that is used as fertilizer for tobacco. In addition, the powder is used to slow down the setting speed of plaster, and experiments are now being conducted to use it in the manufacture of plastic products such as ash trays.

Researchers now are working on a pill, derived from beef bone, that they hope will help prevent tooth decay. They believe the pill, said to be rich in calcium, phosphorous, and fluorine, also will keep the bones of old people from becoming brittle.

In an experimental plant recently set up in Omaha, in the State of Nebraska, the same company is testing a new way of curing hides. Most hides are now cured by sprinkling rock salt on them. This process takes at least a week, and many packers allow hides to cure for from 30 to 60 days. In the Omaha plant, the hides are dipped into a strong brine solution which is constantly agitated. This is said to reduce curing time to 24 hours and also to produce a more uniform product.

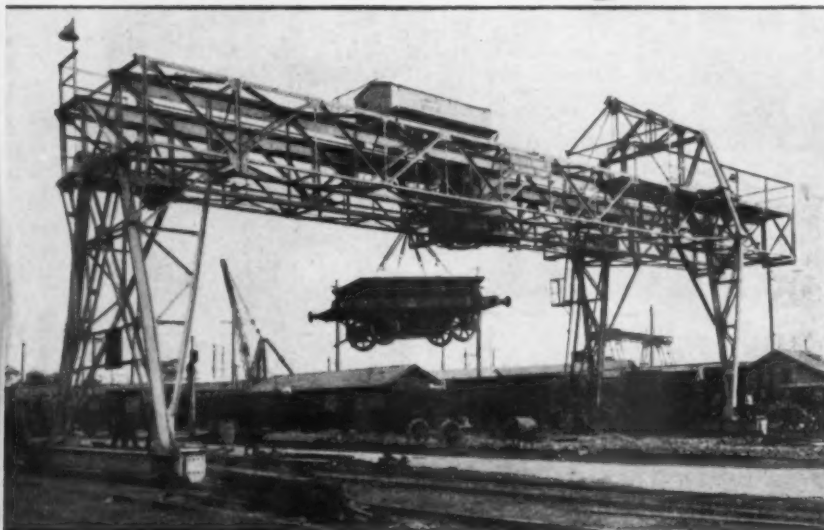
BASE METAL INDUSTRY OUTPUT.

Mr. H. St. J. Somerset, president of the Australian Mines and Metals Association recently stated in the Association's annual report that the expansion and increased output in the base-metal industry, are being retarded by the impossibility of keeping plant and machinery in operation at the highest levels.

He said it was difficult for industry to function satisfactorily under these conditions. Rising costs were accentuated by price increases, and the inflationary cycle, once started in this manner, was particularly difficult to halt.



GANTRY CRANES *take the BIG lifts*



Illustrated are two examples of the many Gantry Cranes designed and built by MALCOLM MOORE.

In the upper illustration is shown a Crane of 8 tons capacity with 107 ft. bridge, built for a large engineering works in New South Wales.

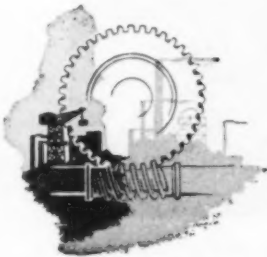
The lower illustration shows one of a number of Gantry Cranes supplied to the Victorian Railways for handling goods on sidings. It has a capacity of 15 tons; the 55 ft. bridge spans two railway tracks and a roadway.

GE45



MALCOLM MOORE PTY. LTD.
CRANE DIVISION

FULL PARTICULARS FROM: VIC.: Malcolm Moore Pty. Ltd., Williams-town Rd., Port Melbourne. N.S.W.: Malcolm Moore (N.S.W.) Pty. Ltd., Chatworth House, 1-7 Bent St., Sydney. QLAND: Crossle & Cameron Pty. Ltd., Sun Building, Eagle St., Brisbane. STH. AUST.: Power Plant Ltd., 100 Currie St., Adelaide.



INDUSTRIAL GEARING

HELICAL SINGLE REDUCING OR INCREASING GEARS
DOUBLE HELICAL SINGLE AND COMPOUND GEARBOXES
RADICON WORM REDUCERS SINGLE AND DOUBLE REDUCTION
SPUR — SPIRAL — HELICAL — BEVEL AND WORM GEARING
GEAR-CUTTING TOOLS — COUPLINGS — P.I.V. VARIABLE SPEED GEARS



Sales Representatives:

E. J. ARMSTRONG H. E. DINGLE R. I. RAY & CO. FRANK DE ROSE & CO. FLOWER, DAVIES & JOHNSON LTD. CROSSLE & CAMERON PTY. LTD.
SYDNEY NEWCASTLE PORT KEMBLA ADELAIDE PERTH BRISBANE

THE RICHARDSON GEARS PTY. LTD.

17 WHITEHALL STREET

FOOTSCRAY

VICTORIA

AUSTRALIA

FOUNDERS OF THE GEARING INDUSTRY IN AUSTRALIA



PUTTING THE "Quality" INTO SANDERSON'S TOOL STEELS!

MELTING STEELS FROM THE FINEST
MATERIALS AND BY THE MOST MODERN
ELECTRIC ARC OR HIGH FREQUENCY
FURNACE METHOD IS THE FIRST
ESSENTIAL — BUT, TO MAKE A GOOD
STEEL BETTER, PLENTY OF FORGING
OR HAMMERING IS NECESSARY

Send us your Enquiries
FOR SPECIAL TOOL AND DIE STEELS

PHOTOGRAPH SHOWS A 14 INCH INGOT
OF "476" HEAVY DUTY DIE STEEL
BEING HAMMERED DOWN TO 5 INCHES
SQUARE — THUS ENSURING PERFECT
GRAIN STRUCTURE

LITERATURE AVAILABLE:

86 COBALT & HIGH SPEED STEELS 83 DIE STEELS 84 NON-DISTORTING STEEL
14233 HEAVY DUTY DIE STEEL 85 PNEUMATIC TOOL STEEL

AUSTRALIAN REPRESENTATIVES — J. Baumbach, Solihull Steel Co.
Pty. Ltd., P.O. Box 10, S. Melbourne; Austral Engineering Supplies
Pty. Ltd., Sydney; Wm. N. Barron, Sydney; Atkins Ltd., Adelaide;
A. W. G. Davey & Sons, Cheltenham; F. Wilson, Sons & Co., Perth;
McLenn Bros. & Nigg Ltd., Perth; Packer Bros. & Nigro Pty. Ltd.,
Brisbane; W. & G. Genders Pty. Ltd., Launceston and Hobart.
NEW ZEALAND REPRESENTATIVES — Brittain, Wynyard & Co.,
P.O. Box 1438, Auckland, and at Christchurch.

TOOL STEELS
BAND SAWS
COLD SAWS
SEGMENTAL
SAWS

SANDERSONS

of Sheffield

SANDERSON BROS. & NEWBOULD LTD
ATTERCLIFFE WORKS, SHEFFIELD.

ALLOY STEELS
CIRCULAR
CUTTERS
HACKSAWS
FILES

INQUIRIES FOR PLANT MATERIAL AND AGENCIES

"THE AUSTRALASIAN MANUFACTURER'S" INQUIRY DEPARTMENT

This Inquiry Service is for the use of readers of "The Australasian Manufacturer" who wish to trace suppliers of Plant, Equipment and Materials, and for particulars of agencies offered. Address your inquiry to the Inquiry Department, and give the fullest possible particulars to enable us to put you in touch with the best sources of supply. **INCLUDE A STAMPED SELF-ADDRESSED ENVELOPE WITH YOUR INQUIRY.** It is essential that telephone inquiries be confirmed by letter. No charge is made for Inquiry Services, but normal advertising rates will be charged if agencies are sought by manufacturers' representatives or if goods are offered for sale. For the benefit of new subscribers, inquiries will be published in two or more consecutive issues.

SPECIAL NEW INQUIRIES.

WHEN REPLYING to an Inquiry, please quote the Reference Number and send your reply to the Inquiry Department, "The Australasian Manufacturer," 16 Bond Street, Sydney. **INCLUDE A PLAIN, STAMPED ENVELOPE** so that we can forward your reply to the Inquirer.

SPOT WELDER WANTED: Inquirer wants to purchase one "E.M.F." Spot Welder, 7 to 10 K.V.A. Automatic. New or Second-hand. Write to Ref. 8192, c/o "The Australasian Manufacturer."

WOODEN TENT PEGS AND HAMMER HANDLES: Firms manufacturing Wooden Tent Pegs and Hammer Handles are asked to write to Ref. 8193, c/o "The Australasian Manufacturer."

CUPBOARD VENTILATORS, DRAFT STOPS AND SHOWER CIRCLES: The manufacturers of "Inserta" Cupboard Ventilators, "Russack" Draft Stops and C.P. Shower Circles, are requested to

DIESEL DRIVEN ALTERNATOR SET FOR SALE:—Engine by Vickers-Pettus. Vertical Twin Cylinder. 48-K.V.A. Alternator, 415-volts. Complete Plant. Write to Ref. 6577, c/o "The Australasian Manufacturer."

FOR SALE

CLEANING FLUID

90% Solvent
109 MORAY STREET, SOUTH MELBOURNE
Telephone: MX 6032

PLASTIC MOULDINGS, DIES AND AUTO. LATHE CAPACITY

Specialists in Electrical and Industrial Mouldings. Prompt service.
MASTERCRAFT PLASTICS
73 Parramatta Road, Stammers,
N.S.W. LA 3680, FW 3619.

write to Ref. 8194, c/o "The Australasian Manufacturer."

PLASTIC TUBING WANTED: Sydney manufacturer urgently requires clear transparent plastic tubing, 3 in O.D. x 2 1/2 in. I.D., in lengths of 81 and 51 inches. Write Ref. 8195, c/o "The Australasian Manufacturer."

MUFFLE FURNACE: W.A. organisation desires to obtain a second-hand small Muffle Furnace or an annealing oven, electrically heated, with instruments up to 1,000 degrees centigrade. The muffle to be in the vicinity of 12 x 12 x 12 in. Firms interested write Ref. 8196, c/o "The Australasian Manufacturer."

CENTRIFUGAL FILTERS: The manufacturer or Agent for Lang's Centrifugal Filter is requested to write to Ref. 8197, c/o "The Australasian Manufacturer."

PYROMETERS: A manufacturer using Calciners and other types of furnaces, require Pyrometers, and would be pleased to receive priced catalogues of plain, recorder and thermocouple types. Address will be supplied on application to Ref. 8198, c/o "The Australasian Manufacturer."

FRUIT JUICES AND SOFT DRINKS: A South African manufacturer of fruit juice ex-

MANUFACTURERS! W.A. REPRESENTATION: Are your products represented on W.A. Goldfields? Experienced Agents possessing good connections and credentials are seeking to represent Manufacturers of quality products on the Goldfields, particularly the Gold Mining Industry. Apply "Goldfields", c/o "The Australasian Manufacturer", Box 1687, G.P.O., Sydney.

COPPER TUBING FOR SALE

1,000ft. 3/4 O.D. x 1/8.
Copper Tubing
LANGCO INDUSTRIES
32-34 Alfred Street, Rozelle, N.S.W.
Phone: WB 2538



AIR FILTERS "TELLTALE"

- You see them work
- You see the dirt

← Centrifugal action
LUBRICATOR for →
Pneumatic Tools

Visible and Automatic Action

ACTA PTY. LTD.

15 O'Connell Street, Sydney,
N.S.W. Phone: BW 7431.



tracts who is migrating to Australia wishes to establish a cordial and soft drink extracts factory in this country and is interested in partnership or other form of business association with a similar existing establishment. Further particulars on application to Ref. 8199, c/o "The Australasian Manufacturer."

PREFABRICATED PIPES: A Dutch firm which specialises in the fabrication of steel, copper

YOUR REPRESENTATIVE IN EUROPE?

An English Exec. Engineer, experienced in research, development, projects, production and inspection, travelled and connected, invites companies appreciating their need for a permanent technical and general representative in Britain and on the Continent write to Ref. 6577, c/o "The Australasian Manufacturer," or to Box 4816, G.P.O., Sydney.

MACHINING CAPACITY AVAILABLE

For Lathe

48in. dia. x 6in.

18in. dia. x 5ft.

Contact

IMPROVED CONSTRUCTIONS PTY. LTD.

Structural and Mechanical Engineers
Castle Hill and Victoria Roads, West Pennant Hills, N.S.W. Phone: WM 1071.

and other piping for installation in ships, oil refineries, factories, etc., wishes to engage in the production of such commodities in Australia and is interested in partnership or other form of business association with a similar existing establishment in this

SCRAP METAL

We pay the best price for Zinc, Lead, Brass, Copper, Solder, Gun — New or Old.

SOUTH MELBOURNE SCRAP IRON CO.
109 Moray Street, South Melbourne
Telephone: MX 6032

DIE CASTING MACHINE FOR SALE

Sydney firm has for sale Kippacaster 215B, Gas Fired, Compressed Air Operated, Zinc Alloy Die Casting Machine, 1 1/2 lb. capacity with additional Gossneck, Plunger and Nozzle, increasing capacity to 3lb. Portable Pyrometer and Gas Control Valve included. Never used, as new.

F. W. BRINSMEAD PTY. LTD.
26 Myrtle Street, Marricville, N.S.W.

BOILER PLANT FOR SALE

Complete Boiler Plant consisting of Babcock & Wilcox boiler, 1,218 square feet heating surface, working pressure 140 lbs. per square inch. Weir pump, indicators, Saunders 5in. oil burner complete with forced draft fan, short chimney with ejector-type induced draft. The whole plant and brickwork in first-class order. Available for removal approx. middle of August. Best offer exceeding \$4,000. Reply "ENGINEER," Box 21, Bentleigh, Vic.



5½" CENTRE LATHE

SPECIFICATIONS:
Height of Centres: 5jin.
Length between Centres: 24in.
Swing in Gap: 15in. diam.
Timken Bearings.
Hollow Spindle 1in. bore.
Tailstock Spindle No. 2 Morse Taper.
Lead Screw: 1in. diam. x 4 T.P.I.

**A.E. HERBERT
PTY. LTD.**

From leading Machinery Houses
throughout Aust. and N.Z.

BIRMINGHAM STREET, ALEXANDRIA, N.S.W.

MU 2705—MU 2834.

country. Write Ref. 8200, c/o
"The Australasian Manufacturer."

ELECTRIC MOTORS FOR SALE: Brisbane firm has for sale approximately 900.1/3 H.P. split phase motors, 240 volts, 50 cycles, standard mounting with 1 in. shaft extension. Leading British make. Unused and available in original packing cases, price £6/15/- each in 100 lots or over. Write to Ref. 8183, c/o "The Australasian Manufacturer."

TECHNICAL DRAWINGS AND SPECIFICATIONS: German Engineer, V.D.I., who came to Australia under Government sponsorship, will execute technical drawings and specifications of all kinds. Write to Ref. 8184, c/o "The Australasian Manufacturer," 197 King Street, Melbourne, Vic.

AGENCY AVAILABLE — ELECTRIC PETROL AND HAND-OPERATED MOBILE LORRY LOADERS: South Australian firm is interested in appointing Agents in each State for the distribution of a range of electric, petrol or hand operated mobile lorry loaders and cask lifters of British manufacture. Write Ref. 8185, c/o "The Australasian Manufacturer."

PRODUCTION OF LEATHER GOODS: A Dutch firm of leather tanners and manufacturers of leather articles, wishes to engage in the production of these items in Australia, and is interested in partnership, or other form of business association with a similar existing establishment in this country. Australian firms interested in this inquiry are requested to communicate with Ref. 8186, c/o "The Australasian Manufacturer."

AGENCY AVAILABLE — TOY CONSTRUCTION KITS FOR ELECTRIC CLOCKS: An established firm desires to appoint distributing agents in each State for a British modern toy in the form of a construction kit for making a complete and elaborate

electric clock. Write to Ref. 8187, c/o "The Australasian Manufacturer."

MILD STEEL OFF-CUTS: Country firm in New South Wales is seeking off-cuts of mild steel (black, zincanneal or galvanised), in gauges 18 to 20. They desire to cut these off-cuts to sizes 12 in. x 2 in. approximately. They require up to approximately 100 lbs. Write to Ref. 8188, c/o "The Australasian Manufacturer."

AGENCY AVAILABLE — STEEL AND MILD STEEL PRODUCTS: Firm with excellent overseas steel connections desires contact interested parties in each State, with the view of importing and distributing imported steel. Financing of imports will be considered. Write to Ref. 8129, c/o "The Australasian Manufacturer."

DRYING ROOM FOR SALE: Sydney firm having no further use for a drying room at their factory, offers it for sale to interested manufacturers. It is 12 x 14 x 8 feet high (1,344 cubic ft.), complete with Heater (gas) and motor and fan. Insulated Masonite outside and painted iron inside, 2 large doors. Complete with thermostat controls, etc. The total cost of this Drying Room was £463 five years ago and it is in excellent condition. Further particulars from Ref. 8190, c/o "The Australasian Manufacturer."

CRUSHING ROLLS WANTED: Sydney manufacturer requires urgently set of crushing rolls. Please supply details of size, make and price to Ref. 8191, c/o "The Australasian Manufacturer."

SPRING STEEL WANTED: Brisbane firm wants to purchase quantities of 7/16 in. Spring Steel in widths of 2 in., 2½ in., or 3 in., in lengths of 2 ft. 6 in. upwards. Write to Ref. 8178, c/o "The Australasian Manufacturer."

COLOURED LENSES FOR SWITCHBOARDS: Victorian firm desires to contact makers or suppliers of coloured lenses for flush pilot receptacles which they fit to

"Cyclone"
CONVEYOR BELTS
for continuous production

Cyclone makes industrial conveyor belts with any required degree of tensile strength or resistance to heat or chemicals. Industries already using them include:

- FOOD PROCESSING
- TEXTILE AND RUBBER PROCESSING
- TIMBER MILLS
- GLASS AND CERAMIC LEHRs
- INDUSTRIAL FURNACES

"Cyclone" Belts are made of Black or Galvanised Steel Wire, Stainless Steel, Monel Steel, Copper, Nickel, Chrome, Brass, Aluminium, Dural and other alloys.

Suggestions regarding the type of conveyor suitable for any particular job will gladly be given, and enquiries are invited.

CYCLONE
COMPANY OF AUSTRALIA LTD.
MELBOURNE SYDNEY
PERTH ADELAIDE BRISBANE

● SHEET STEEL ● ● OFFCUT ●

We specialise in the accurate sorting, gauging and guillotining of Mild Steel Sheet Offcut.

AVAILABLE IN ANY WIDTH AND ALL GAUGES

MARKS & BOYLE

10A ALICE STREET, NEWTOWN, N.S.W. Phone: LA 4319.
And at 247 Lawrence Street, Alexandria, N.S.W.

BUNGE

(AUSTRALIA) PROPRIETARY LIMITED

IMPORTERS & EXPORTERS

Chemicals (Raw Materials)	Grains	Cotton	Machinery
Flour	Yarns	Timber	Wool
Textiles	Foodstuffs of all Descriptions		

AUSTRALIAN OFFICES:

MELBOURNE - 419 Collins St. SYDNEY - 3 Spring St. ADELAIDE - 82 King William St.
PERTH - 98 St. George's Terrace BRISBANE - 72 Roma Street

FLOUR MILLS AT: BALLARAT - Victoria ALBURY & MURRUMBURRAH - N. S. Wales

OVERSEAS HOUSES:

Bunge & Co. Ltd., LONDON, LIVERPOOL, MANCHESTER Societe: Anon: Bunge, ANTWERP
N. V. Bunge's Handelsmij, AMSTERDAM Societe: Francaise Bunge, S.A., PARIS
Bunge Aktiengesellschaft, ZURICH Bunge Corporation, NEW YORK Bunge Mexico, S.A., MEXICO
Bunge & Born Ltda., BUENOS AIRES "Sanbra" SAO PAULO
BUNGE FAR EAST AGENCIES INC., SHANGHAI, HONG KONG, MANILA, TOKYO.
And at COPENHAGEN, ROME, ATHENS, SINGAPORE, SAIGON, CAPE TOWN, JOHANNESBURG,
DURBAN, EAST LONDON, LEOPOLDVILLE, BATAVIA.

switchboards. These lenses are made of glass, some being shaped round and others oblong. They vary in size from about 2 in. diameter to approximately 2 in. The colours are usually red, green, blue and orange. They are also used on radio receivers, motor car head lamps and dash boards, and in telephone exchanges. Size wanted is approximately 2 in. diameter. Write to Ref. 8179, c/o "The Australasian Manufacturer."

WATER RAISING APPLIANCES, WINDMILLS, PUMPS, ETC., AGENCY AVAILABLE: Well known Australian firm manufacturing all types of Water Raising Appliances, including Windmills (Direct Acting and

Geared), Pumps (Centrifugal and all other types), Pumping Heads, Jacks and all accessories, is interested in appointing distributors in Victoria. Firms interested in securing this agency are asked to write to Ref. 8181, c/o "The Australasian Manufacturer."

BRIGHT SHEET STEEL FOR EXCHANGES: A Sydney firm will exchange 18 Gauge Matt Pickled "R" Sheet Steel for 20 Gauge of a similar grade. Write to Ref. 8170, c/o "The Australasian Manufacturer".

NICKEL SILVER STRIP AND BRASS WIRE FOR SALE: N.S.W. firm has for sale a quantity of Nickel Silver Strip, .130 in. x .030 in. Nickel Silver Wire

.076 in. and .056 in., also brass wire .076 in. diameter. Write Ref. 8171, c/o "The Australasian Manufacturer".

PNEUMATIC MARKING MACHINE WANTED: Sydney organisation wants to purchase a pneumatic machine for marking steel parts, 1/16 in. and 1/8 in. letters and figures. If you can supply, write to Ref. 8174, c/o "The Australasian Manufacturer".

MATERIAL WANTED: Melbourne firm wants to buy 200 ft.—1 in. Bright Shafting and 300 ft. of 3 x 3 x 1/4—5/16 in. or 1/2 in. Angle Iron. Write Ref. 8175, c/o "The Australasian Manufacturer".

AGENCY AVAILABLE—ELECTRICAL CABLES, FLEXES, Etc.: Melbourne firm is interested in appointing an Agent in New South Wales for the distribution of a range of English electrical cables, flexes, car cables, as well as other electrical and hardware lines. Further information on application to Ref. 8177, c/o "The Australasian Manufacturer".

REMNANT STEEL FOR SALE OR EXCHANGE: Melbourne firm has for sale or exchange the following material: Mild Steel Sheet 10-24 gauge; Stainless Steel Sheet, 10 and 12G; Zincanneal 20G; Zinc No. 10; Copper Sheet 20-26G; P.G. Iron 16-24G. Write to Ref. 8176, c/o "The Australasian Manufacturer".

MINERALS PTY. LTD.

318 Botany Road, Alexandria, Sydney, N.S.W.
Currie Street, Adelaide, S.A., and Perth, W.A.

Cable Address: "MINERALER," all States.

In Association with



MINERALS (VIC.) PTY. LTD.

Ingles Street West, Port Melbourne, Vic.
And 27 Elizabeth Street, Hobart, Tas.

Industrial Earths and Wood Flour Millers.

Mineral Earths & Pigments

CLAY

For all Industries

POWER HACKSAW - 8"x 8" "MILRO"

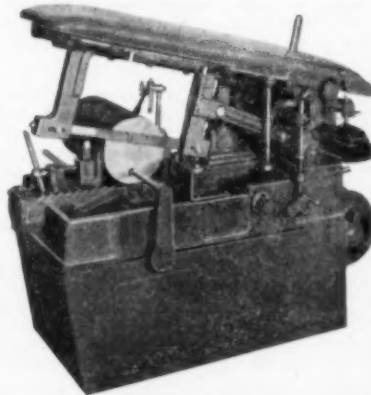
A New Universal High-Speed Heavy-Duty Model



HIGH PRODUCTION
RATE—

LOW MAINTENANCE
COST—

*The Most Economical
Means of Cutting
from the Bar*



Note these Outstanding
Features:—

1. Hydraulic Pump Control.
2. Simple Feed Control.
3. Precision Ground Covered Guides.
4. Two-speed, self-contained motor drive.
5. Saw bow automatically returned to raised position after the cut, and machine stopped.

DEMCO MACHINERY CO. PTY. LTD.

243 CLEVELAND STREET, REDFERN, SYDNEY.

Telephone: MX 2291

355 WILLIAM STREET, WEST MELBOURNE, VIC.

Telephone: FJ 9238



**IMMEDIATE
Delivery**

of **CHAIN HOISTS**
MANUAL & ELECTRIC

TECHNICAL SERVICE

Brown & Dureau's widely experienced staff will be happy to assist you with practical, impartial advice on any hoist problems you may encounter. A 'phone call or a letter will place their services at your disposal. No obligation, of course.

Cut your lifting costs now with "Key" Manual or "Loadmaster" Electric Chain Blocks. Brown & Dureau can supply from stock or for early delivery either type, ranging from $\frac{1}{2}$ ton to 5 tons, for every industrial purpose. Lift your production . . . cut your costs with modern hoists from Brown & Dureau Ltd.



BROWN & DUREAU LTD.

MELBOURNE • SYDNEY • BRISBANE • ADELAIDE • PERTH

Totally Enclosed Electric Motors

Sales of Newman totally enclosed fan-cooled electric motors indicate the growing popularity of this type of motor for general purpose use.

Mr. L. D. Beston, 387 Kent Street, Sydney, Australian representative of Newman Industries Limited, Yate, Bristol, England, has brought to notice a recent report by A. N. D. Kerr, A.M.I.E.E., on the question of standardisation of British motors, and some thought could profitably be given to the same question by manufacturers in this country. The report reads as follows:

THE publication of the Lemon Report has once again focused attention on the need for simplifying and rationalizing engineering equipment, if Great Britain is to hold world markets in competition with other well-organized industrial nations. As the most important item in such equipment is usually the electric motor which drives it, undoubtedly some measure of motor standardization would initiate improvements in the equipment which motors drive with benefit to all concerned both at home and overseas.

It is suggested, therefore, that the time is now opportune for manufacturers to reconsider the design and production, and users the application, of a range of British Standard a.c. induction motors for 50 c/s three-phase circuits at 200-550 V, as that range comprises the overwhelming majority of world supplies. They would be of

squirrel-cage construction, as this is the standard pattern for all applications in which unduly low starting current is not essential. Such motors would also be suitable for many 60 c/s circuits. Consequent on the heavy initial outlay for new patterns, jigs, tools and dies which would be required the machines would have to be in the range of market demands which makes flow production practicable, say, initially 1 to 15 h.p.

TYPES OF ENCLOSURES.

Of the various types of enclosures available, the totally enclosed machine with some form of augmented cooling is already fast approaching world popularity. The recognized British Standard enclosure, therefore, in this range should be the totally enclosed surface fan-cooled machine. Screen protected, drip-proof and other enclosures would, however, continue to be available

in that range when required, but they would gradually become relegated to the category of non-standard enclosures in favour of the standard totally enclosed machine.

Totally enclosed motors built to B.S.168 have no sustained overload capacity. However, they are capable of an excess torque of 100 per cent. for 15 seconds, and 50 per cent. for one minute. In effect they would be rated on the basis of continuous maximum output.

TEMPERATURE RISE.

The present 50 deg. C. temperature rise is now thought to be on the low side for machines with augmented external cooling and 55 deg. C. is suggested. This is the standard figure used in Canada and the United States of America for totally enclosed machines and it is also the one which was agreed in the war-emergency B.S.1156: 1945.

If at the same time as the development of this new B.S. range was being considered a revision of B.S.168 were to be undertaken to bring it more in harmony with the needs of industry as well as of the Services, it would then be possible to have only one standard for medium size rotating machines. Some proposals to this end,

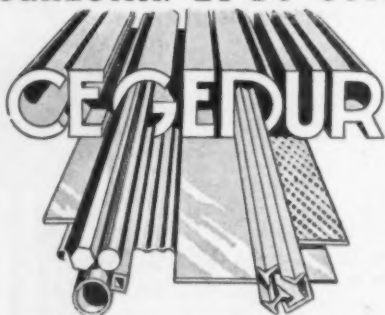
particularly as affecting tolerances permissible in manufacture, have already been made.

Coincident with the revision of B.S.168 the opportunity should also be taken to standardize dimensions of the new range. Motors designed and built to an up-to-date specification, taking advantage of the improvements in materials and manufacturing techniques of the past decade and interchangeable in fixing dimensions with similar ratings, would be welcome to users because they would be in every way B.S. motors.

The actual dimensions would need to be chosen with great care. They should preferably be such as would command general acceptance, not only in this country, but also in markets overseas; particularly in markets of such vital importance to us as Canada. It will be appreciated that if standardized dimensions are already available, their adoption on our own standard range would have the advantage of assisting the entry and promoting the sale of British motors in markets now using such dimensions.

One set of such standard dimensions already exists on the North American Continent. They are those of the National Electrical Manufacturers' Asso-

COMPAGNIE GENERALE DU
DURALUMIN ET DU CUIVRE



ALUMINIUM and LIGHT ALLOYS

SHEETS — STRIP — CIRCLES — RODS — SECTIONS —
TUBE — WIRE — CABLES, Etc.

All enquiries to

JOHN HART PTY. LTD.

414 COLLINS STREET, MELBOURNE

"SECO"
THE UNSURPASSED
TOOL METAL

WOODWORKING & ENGINEERING
SUPPLIES PTY. LTD.

127 WILLIAM STREET, MELBOURNE. MB 2741.

ciation (N.E.M.A.) of the U.S.A. Already a well-known British motor maker has considered their use and in a report published recently has announced their adoption for a range of totally enclosed surface fan-cooled machines which were shown at the recent Canadian International Fair in Toronto.

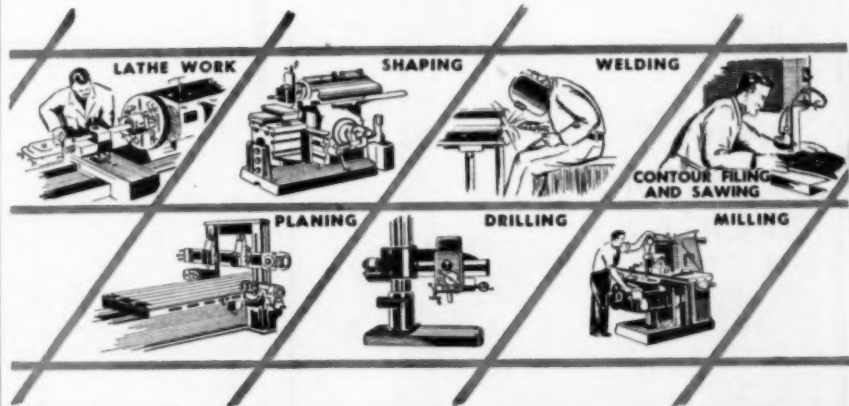
An examination of the N.E.M.A. dimensions, however, discloses, says the author in the "Electrical Review", that machines complying with them are unduly large when compared with British motors of similar ratings. It might nevertheless be an asset to use these dimensions, but to obtain from the frame sizes concerned their maximum continuous outputs to the revised British Standard, obtaining, for example, 10 h.p. from a frame built to N.E.M.A. 7½ h.p. dimensions. It would then be possible to offer Canadian and American users as well as all those in their overseas markets who have already standardized on N.E.M.A. dimensions a frame size interchangeable in fixing dimensions with the one that they were at present using, having not only the same output but (and this would be a sales advantage to British machines) also an appreciably greater output if desired.

Another item which might also receive consideration at the same time as fixing dimensions were standardized would be the use of metric bearings, which would be of great assistance in foreign markets and would bring British machines into line with world standards.

To the British user any dimensions which represent an alteration from those of the make which he is at present using would be initially an inconvenience; consequently, if dimensions have to be altered, they may as well come into line with another existing standard as introduce an entirely fresh one.

Undoubtedly, however, to the home user the advantage of a new range of British Standard motors with frame sizes of similar ratings having interchangeable fixing dimensions would be that they could retain their existing suppliers and yet in an emergency use

Help yourself to our facilities . . .



to push your product along

**TO LIFT
THE PRESSURE
ON YOUR OWN
PLANT FACILITIES
CALL . . .**

W. E.

Smith Engineering PTY. LTD.

AN ENGINEERING ORGANISATION - ORGANISED TO SERVE ENGINEERS

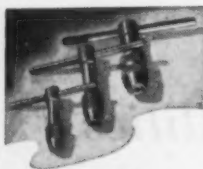
36-40 PACIFIC HIGHWAY NORTH SYDNEY, N.S.W. - XB7183 • XF1660 • XF1696

Knowing where to get turning, milling, shaping, planing, boring, welding is half way to getting what you want—production out to scheduled time.

Our plant is organised and equipped to help others . . . to take over the jobs that take up valuable time and bottleneck production . . . to relieve your machines of roughing and other preliminary operations . . . to make and reproduce "one-off specials" such as equipment repair items that would interfere too much with your own machining time and labour.

Look us up. We're equipped and organised for jobbing work in the machine shop and welding shop. It's our specialty.

STEWART Quality Productions



"Stewart"

Tap Wrenches

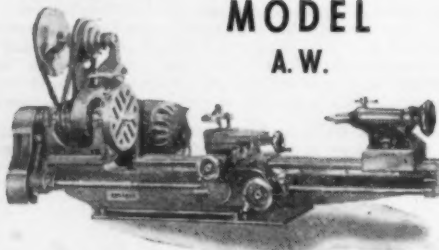
No. 104, 0-1in., 4-Jaw
No. 204, 1-1/2in., 4-Jaw
No. 312, 2-1/2in., 2-Jaw

BARIN DRILLING MACHINE

3/4 Capacity

A high-grade machine tool of fine finish and accuracy. The table can be tilted for angle work and revolves on machined faces. The Spindle is bored No. 2 Morse taper and runs in ball bearings, the six spline spindle giving ample drive, and is independent of the five-step pulley. A slow speed attachment allows for tapping and screwing operations or for heavy reaming and spot facing. Supplied for bench or floor mounting with single or three phase motor. Weight packed, 330lb.

ADVANCE LATHE



MODEL
A.W.

Centre Height: 3 1/2in. Distance between Centres: 21in. Swing in Gap: 8 1/2in. Hole through Spindle: 17/32in. Micrometer adjustment to cross slide, Adjustable Head and Tail Stock for Taper Boring and Turning, 1/3rd H.P. single phase motor, vertical milling slide, steady and chucks.

ALFRED STEWART Pty. Ltd.

169 ABBOTSFORD STREET, NORTH MELBOURNE

'Phone: FJ 6922

PUREST QUALITY
EVEN CONSISTENCY

AVARC and
GROZIER'S

GRAPHITE

BRITISH MINED AND REFINED

W. D. GROZIER & CO.

40 Serpentine Road, Greenwich, N.S.W.

Telephone: XF 1338

GRAPHITE SPECIALTIES

- Avarc Industrial Graphite Paints
- Pure Flake Lubricating Graphite
- Graphite Pipe Joint Compound
- Boiler Graphite
- Silica Graphite Paints

INDUSTRIAL AND AUTOMOTIVE

- Graphite Cup Greases
- Graphite Gasket Seal
- Colloidal Graphite
- Airlite Lubricating Graphite
- Graphited Penetrating and Lubricating Oil

alternative makes without disturbing production.

To sum up, it is suggested that the time is now opportune for B.S.168 to be revised to encourage the development of a new range of British Standard motors which would comprise totally enclosed surface fan-cooled squirrel-cage machines of from 1 to 15 h.p., having a temperature rise not exceeding 55 deg. C. metric bearings, and fixing dimensions interchangeable for the same ratings.

Newman Industries Limited realised early the possibilities of mass production of totally enclosed motors, reasoning along these basic lines:

By standardizing on the totally enclosed motor and concentrating manufacture on the more popular sizes, important production advantages and economies are secured. The benefits of the totally enclosed motor can thus be made available at prices which permit its universal application. By this policy Newman claim to have taken a major part in bringing about the more general use of fully protected motors with their attendant advantages of increased reliability and efficiency.

Electric motors are required for a constantly widening range of duties; and similarly the operational requirements for each type of duty are daily becoming more diverse. If an attempt is made by the manufacturer to meet all these various demands, the organization of motor production on efficient modern lines becomes a

difficult proceeding. Effort is dispersed and wasteful.

Over a period of years, Newman found that as motors came to be more and more in demand, the trend was for certain types and sizes to be most frequently ordered. From this point the idea of Newman standardization began.

It was realised that by concentrating on the sizes most frequently needed, and producing a design of motor which had a good enough specification to be suitable for practically all conditions, it would be possible to develop such large scale production that costs would be cut extensively, even in spite of the superior qualities of the improved design adopted.

This led to the development of the now familiar Newman totally enclosed squirrel-cage fan-cooled motor—a standardised general-purpose motor with qualities hitherto normally only found in expensive motors of specialized types. That this design possessed inherent qualities which met the needs of the widest possible range of application is proved by the many thousands of motors built to this specification, which are giving every satisfaction in service under a multitude of conditions.

To-day, this design is featured in a complete series of motors ranging from a 1/4 horse-power to 25 horse-power; standardization being so ingeniously worked out that in the case of many major components, as few as four main variations in size suffice to build

more than fifty different motors. The increase in production runs and consequent economies in cost can easily be imagined.

It is by these methods, introduced at every stage, that Newman have succeeded in producing, in the specific range which they manufacture, motors of the highest specification which can be offered at prices which are in competition with motors of quite average specification.

TRADE INQUIRIES.

DEPARTMENT OF COMMERCE AND AGRICULTURE.

Trade inquiries regarding the products listed below have been received by the Department of Commerce from its overseas representatives.

It is felt that publication of these lists will interest those Australian firms who are contemplating or are engaged in, export trade at the present time, and those who desire such information for future reference.

For complete details, including addresses and bank references of the particular inquiries, firms are invited to apply to the Trade Promotion Section of the Department of Commerce and Agriculture in the various States, quoting the relevant reference numbers.

Agricultural Implements: Ecuador 15/1, Uruguay 80/16, 80/17.

Automotive Spare Parts and Accessories: Argentina 5/37, Brazil 8/51, South Africa 45/651, Uruguay 80/17.

Batteries and Plates: Brazil 8/51.

Builders' Hardware: South Africa 45/651, 45/655.

Canned Fruit: Peru 39/12.

Canned Goods: Hong Kong 12/402, Israel 69/16.

Chemicals: Brazil 8/29 (fine).

Clothing: South Africa 45/653.

Condiments: Hong Kong 12/228.

Confectionery: Hong Kong 12/228, 12/402.

Cycles and Accessories: Uruguay 80/16.

Drugs: Brazil 8/29.

Electrical Supplies and Equipment: Argentina 5/37 (floor polishers), Brazil 8/51 (fans, air compressors and household appliances), Uruguay 80/18 (raw materials).

Enamels: Brazil 8/51.

Engineering Equipments: South Africa 45/648, 45/651.

Flour: Hong Kong 12/228, Peru 39/12, Venezuela 59/9.

Fruit: Venezuela 59/9 (apples and pears).

Fruit Juice Extractors: Brazil 8/51.

Handles: South Africa 45/655 (pick and shovel).

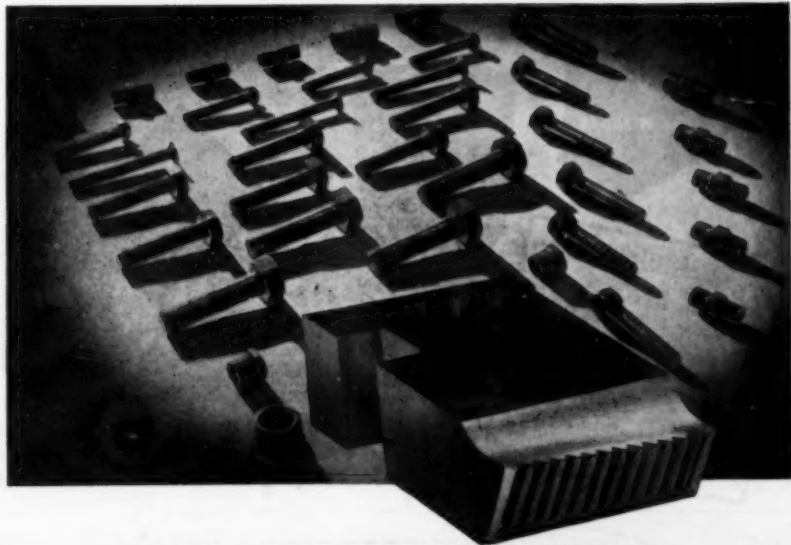
Hardware: South Africa 45/651 (domestic), Uruguay 80/18.

Incubators: Uruguay 80/17.

Jams: Hong Kong 12/228.

(Turn to page 45.)

Chasers—that overtake schedules



T.E.C. STYLE "C" CHASERS increase production... raise accuracy... lower costs

The precision threading, at high speed, of all machinable metals possible with T.E.C. Style "C" Chasers will provide your existing shop equipment with greatly increased capacity.

Additional to this, Style "C" Chasers will save you costs—in their greater threading capacity . . . in their maintenance of accuracy . . . in need for less replacements.

These features can mean a considerable amount to you, whether or not your threading calls for long runs and repetition work. They are the direct result of correct materials

selection and heat treatment to avoid decarburisation and scaling . . . of accurate thread form and finish . . . and of precision grinding of rake angles to suit the characteristics of different metals.

Use T.E.C. Style "C" Chasers for—

- High speed precision work.
- Long runs and repetition work.
- All machinable steels, cast iron, non-ferrous metals and alloys.
- Commercial work—milled thread chasers; for aircraft work and very long engagements where pitch accuracy is vital—ground thread chasers.

ONE SET Style "C" T.E.C. CHASERS PRODUCES 1.65 MILES OF LINEAL THREAD.

Under normal shop conditions one set of T.E.C. Style "C" 1" Whit. 1/2" head S-rake Chasers produced 3,375 ft. of thread before re-sharpening. A further 5,330 ft. were threaded with two sharpenings only—8,705 ft. total, or 1.65 miles with the chasers still serviceable. Material: Martin's bright-rolled grade 1 shafting.

TOOL EQUIPMENT CO. PTY. LTD.

47 BRIDGE ROAD, GLEBE, N.S.W.

Obtainable from Leading Engineering Supply Houses

T.E.C.

SMALL TOOLS

THE AUSTRALASIAN MANUFACTURER
[Page 44, June 17, 1950.]

PLASTIC MOULDED, STANDARD,

B. C. LAMP HOLDERS

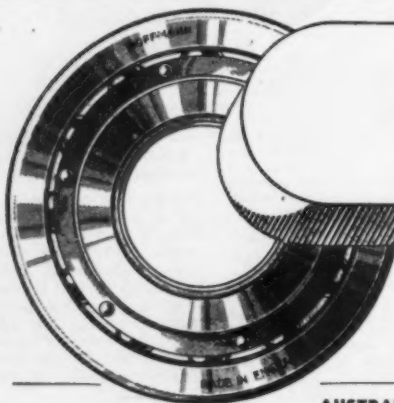
240 VOLTS 3.0 AMPS

UTILUX



REPRESENTATIVES
J. H. WILKINSON
289 Flinders Lane, Melbourne, Vic.
JOHNSON & GASTON (Qld.)
PTY. LTD.
303 Adelaide St., Brisbane, Qld.
JOHNSON & GASTON PTY. LTD.
85 Pirie St., Adelaide, S.A.
E. S. EVERETT
158 William St., Perth, W.A.
JOHNSON & GASTON PTY LTD.
200 Manchester St., Christchurch,
N.Z.

J.J. HOELLE & CO.
47 ALMA ST., DARLINGTON. N.S.W. TEL: MX1561-3.



HOFFMANN

BALL AND ROLLER BEARINGS

Factory Representative: J. THORNELL
136 Liverpool Street, Sydney, N.S.W.

STOCKISTS

AUSTRALIA:

Western Australia

Atkins (W.A.) Ltd., "Mazda House,"
894 Hay Street, Perth.
Bearing Service Co. of Australia (W.A.) Pty. Ltd.,
856 Hay Street, Perth.

South Australia

Atkins Ltd., 55-57 Pirie Street, Adelaide.
Cornell Ltd., 122-130 Pirie Street, Adelaide.
Duncan & Co. Ltd., 107-109 Pirie Street, Adelaide.

New South Wales

Bearing Service Co. of Australia Pty. Ltd.,
38 Wentworth Avenue, Sydney.

Queensland

Bearing Service Co. of Australia Pty. Ltd.,
329 Adelaide Street, Brisbane.
Engineering Supply Co. of Australia Ltd.,
Edward and Charlotte Streets, Brisbane.

Victoria

Bearing Service Co. of Australia Pty. Ltd.,
218-222 Queen Street, Melbourne, C.I.

NEW ZEALAND:

North Island

A. R. Hialop Ltd., 94-96 Dixon Street,
Wellington, C.I.
Kidd Garrett Ltd., Little Queen Street,
Auckland, C.I.

South Island

S. Aitchison Ltd., 250-252 Durham Street,
Christchurch, C.I.
Peter Kennedy Ltd., 178 St. Asaph Street,
Christchurch, C.I.
A. L. S. Cassie Ltd., 366 Morey Place
(P.O. Box 644), Dunedin, C.I.



(Continued from page 43.)

12/402, Venezuela 59/9 (jam pulp).
Jellies: Hong Kong 12/402.
Lamps and Lanterns: Brazil 8/51 (lanterns), Uruguay 80/17 (lamps).
Leather: Venezuela 59/9.
Leathergoods: South Africa 45/653.
Knitting Machines: Ecuador 18/1.
Milk, Powder: Hong Kong 12/228, 12/402, Venezuela 59/9.
Paints: Brazil 8/51.
Polishes: Brazil 8/51.
Pressure Cookers: Brazil 8/51.
Radios and Accessories: Brazil 8/51, Uruguay 80/16.
Refrigerators: Argentina 5/37, Brazil 8/51, Uruguay 80/16, 80/17.
Stoves: Uruguay 80/17 (kerosene and gas).
Textiles: Argentina 5/37 (worsted suitings).
Tools: Argentina 5/37, Brazil 8/51 hand, precision, machine (electric), South Africa 45/651, 45/655.
Torches: Brazil 8/51.
Toys and Novelties: Brazil 8/51 (electric).
Varnish: Brazil 8/51.
Vegetables (Canned): Hong Kong 12/228, Peru 39/12.
Washing Machines: Argentina 5/37, Brazil 8/51, Uruguay 80/16.
Yarns: Colombia 11/23.

NEW DESIGN FOR CIRCULAR SAWS.

In a paper "Circular-Saw Blades Free of Kickback", by J. Lindner, the author describes a radically new design of circular saw, having six or eight widely separated teeth cut in the circumference, instead of the continuous array as found in the conventional design. The gullet is large, and the back of the tooth greatly elongated, rounded, and sloping gradually away from the extreme circumference. The teeth are sawge-set.

The author calculates that with the transfer of the tooth profile of a handsaw to the circumference of a power-driven saw, it is impossible, having regard to the speeds now used, that every tooth should cut. Many teeth merely scrape the wood, and are rapidly blunted. The new design has, therefore, a longer edgeline. The feed-power required is about 30-40 per cent. lower. The cut surfaces are smoother. There is little noise. The few teeth are more easily serviced. Most of all, however, the author stresses the safety of the new design. Exacting tests are described, to show that this saw has an enormously reduced tendency to lift the wood and throw it back. A progress test report from the German timber-trade authorities, reproduced in the text, goes to support the author's claims.

German and foreign patents have been applied for.

Copies of this paper in translation, will shortly be available, on loan, from the Information

Service of the Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne. Correspondence should be addressed to the Officer-in-Charge.

TIMKEN HANDBOOK AVAILABLE.

A Bearing Service Company Handbook on Timken Tapered Roller Bearings sets out its information in a clear and easily-understandable manner. First the reader is given a detailed description of each type of bearing. The setting and construction of every bearing is clearly illustrated by photographs and drawings.

Then follows technical data on ratings, bearing selection and other information pertinent to the mounting, use and maintenance of the Timken Tapered Roller Bearings. For quick, easy reference the book is thumb-indexed with sketches of the various types of bearings. The load ratings shown in the handbook include the recently announced 25% increase.

Other "B.S.C." handbooks include: "Gits Precision Oil Seals and B.S.C. Felt Retainers, Industrial Price List for Ball and Roller Bearings, Transmission Equipment";

"Seeger Circlips and Twicklips"; "B.S.C. Ball and Roller Bearing Comparison Tables."

All these books are available on application to Bearing Service Pty. Ltd., who have offices in all capital cities.

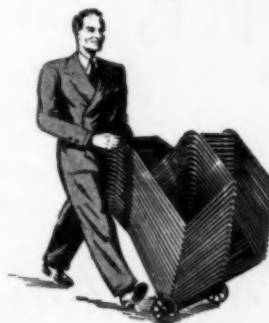
VITAMINS FROM PARSLEY.

Parsley, a garden plant often used only as a garnish for food, is an excellent source of needed body vitamins and minerals, a nutritionist in the United States reports. It should be eaten as a food and not used merely as a decoration for some other and often less valuable foodstuff, the nutritionist says. Analysis of parsley shows it is a fine source of calcium, iron, thiamin (Vitamin B-1), riboflavin (Vitamin B-2), niacin and Vitamin G, says Dr. Hazel E. Munsell, researcher at the Massachusetts Institute of Technology.

"INDUSTRIAL NEWS."

The hosiery industry in the United States produced 67,022,495 dozen pairs of women's stockings in 1949. That is the equivalent of 15 pairs for every woman over 15 years of age in the nation.

There are now over 5,000,000 television receivers in use in the United States, compared with 1,000,000 at the beginning of 1949. The one hundred and first television station recently began operation at Syracuse in the State of New York.

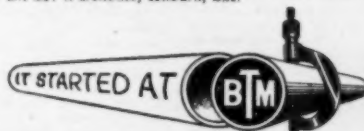


A mere handful of a whole room-full!



"Pel" Tubular Steel Nesting Chairs have every quality chairs should possess. They're beautiful by every modern concept and they are delightfully comfortable. But their outstanding advantage is that when a clear floor is required, a room-full—indeed a hall-full—can be neatly stacked in a few square feet... and the stacking is an easy one-man task. There's nothing better for public halls, social premises, modern schools and all other indoor assembly points.

Distributors—Stewarts and Lloyds (Australia) Pty. Limited, Melbourne, Vic.; Sydney and Newcastle, N.S.W.; Brisbane, Qld.; Perth, W.A. and Hobart, B.T.M. Warehouse, Kilburn, S.A.



GASKETS AND WASHERS OF ALL DESCRIPTIONS
HEAT, STEAM, OIL, AND PETROL PACKING
A SPECIALTY

Packing Materials Supplied in Bulk

PRECISION GASKET & WASHER COMPANY

299 SWAN STREET, RICHMOND, VIC.

Telephone: JB 1086.

K-M STEEL PRODUCTS LIMITED

● IMMEDIATE DELIVERY
FROM SOLE DISTRIBUTORS
FOR N.S.W.

STANDARD RESIDENTIAL STEEL WINDOWS

"K-M" Steel Windows in standard types and sizes suitable for brick, concrete or wood construction. Every part is treated with "BONDSEAL" (Reg.) the protective coating. Write, 'phone or call for quotations and specifications.

WILLIAM ATKINS PTY. LTD.

HEAD OFFICE: 449-451 KENT STREET, SYDNEY.

Telegrams and Cables: "WILATKIN," Sydney.

G.P.O. BOX 1480.

'Phone: BX 5701 (5 lines)

The first mechanical refrigerator was produced in the United States 100 years ago, according to the U.S. Patent Office. To-day about 26,000,000 are used in homes in the United States.

MINIATURE BALL BEARINGS.

INTERESTING APPLICATIONS.

An overseas firm is now making a very wide and comprehensive range of miniature ball bearings of which the smallest has only an outside diameter of approximately 1 mm. The races vary from the oblique type for pivot mounting to the straight out radial type. For instrument work particularly, or other scientific or clock apparatus, the torque is kept remarkably low; for instance, the C1 bearing with an applied load of 10 grams has a starting torque of only 0.006 grams.

Overseas, the scope and application for these bearings have widened remarkably in the last 10 years, and it would appear that similar developments will take place in Australia. We cite some of the applications in which these bearings are used extensively:—Dental apparatus, electric razors, drafting machines, weighing devices, meters, clockworks, aircraft instruments, bicycle dynamo, small electric motors.

Further particulars are available on application to the Bearing Service Co. of Australia, the distributors in the Commonwealth, and recommendation and prices will gladly be made on request.

THE USE OF VOLUMETRIC GLASSWARE.

The Standards Association of Australia has prepared a Code of Recommended Practice for the Use of Volumetric Glassware, CK.1-1949, which sets out recommended practice in the calibration and use of pipettes, burettes, volumetric flasks and measuring cylinders. The unit of volume and standard temperature of volumetric glassware are discussed. Other sections deal with cleaning of volumetric glassware and precautions to be taken, reading of apparatus, calibration for "content" and "delivery". Eleven tables and eleven figures are included. Appendices give recommended compositions of stopcock lubricants and correction tables for use in gravimetric calibration of glassware.

This code brings together for the first time, in compact form, a full treatment of the subject.

QUARTERLY EXECUTIVE CONFERENCE OF A.C.M.A.

At the quarterly executive conference of the Associated Cham-

bers of Manufactures of Australia, held recently in Adelaide, the opinion was expressed by the acting president, Mr. R. J. Webster, that the general adoption of incentive payments in Australia would greatly increase production and check inflation. The conference asked the Federal Government to abolish the payroll tax and assured the Prime Minister of the Association's full support in implementing the Communist Party Dissolution Bill.

The Chambers' Director, Mr. L. Withall, warned the gathering that many industries would be "threatened with extinction" if Australia takes part next September in International Trade Organisation negotiations for the reduction of protective tariffs. "The binding of tariffs," he said, "would take from Australia the right to protect herself against depression or unemployment or exchange variations."

"The Manufacturer" has consistently urged industrialists to exercise the utmost vigilance on this important matter.

£100,000 HOSIERY PLANT FOR ADAMSTOWN (N.S.W.).

Lustre Hosiery Pty. Ltd. is to commence construction at an early date of a hosiery plant at Adamstown, in the Newcastle district. The 300 by 80 ft. roof of the machine room in the single-story building is to be constructed without central pillars. The two-storied administrative block and staff-amenities quar-

ters are to cover another 10,500 sq. feet. Of the 33-acre site, 11 acres have been reserved for ovals, basketball, and hockey fields. Amenity quarters are to include a shop, canteen, milk bar, and dining hall to seat about 500. Of special interest is the fact that although the factory will be closed at week-ends, staff playing sport will be able to use locker rooms fitted with showers and footbaths.

It is estimated that over 400 employees will be needed to process material, brought from Sydney, into stockings and underwear. Later extensions will house weaving machinery, when the complete manufacturing process will be carried out at Adamstown.

AUSTRALIAN TRADE ON UP GRADE.

According to the Commonwealth Statistician, Dr. Roland Wilson, the value of Australian trade in March last exceeded all previous records. Total exports, for example, were valued at £68,965,000 compared with £61,133,000 for the previous month, with imports at £553,628,000, being £9,000,000 higher than the previous record in December, 1949. In March, however, Australia had a favourable trade balance with America of £1,875,000 by comparison with an unfavourable balance of £796,000 in February, this position being due in the main to substantial purchases of wool.

We want to
tell you the

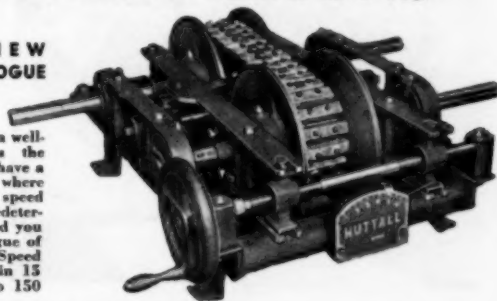
**INSIDE
STORY**

(The IMPORTANT story)

(NUTTALL) VARIABLE-SPEED TRANSMISSIONS

SEND FOR NEW
DETAILED CATALOGUE

The important story of a well-engineered product is the "inside" story! If you have a machine or process where stepless adjustment of speed is necessary between predetermined limits, let us send you the new detailed catalogue of NUTTALL Variable Speed Transmissions—made in 15 sizes from fractional to 150 h.p. capacity.



N.S.W. Agents for NUTTALL Clutches & Transmissions



MODERN TOOLS PTY. LTD.

Machine Tool Merchants and
Transmission Specialists

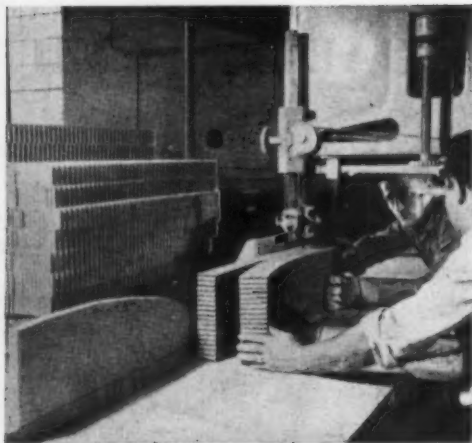
ROSEBERY, N.S.W. Phone FF1291

**ASSOCIATED
POWER SEALERS**

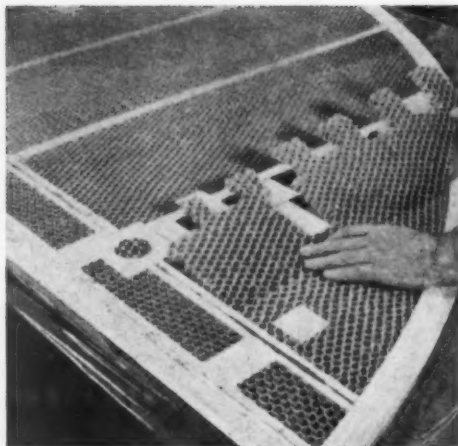
**MAKE
GASKETS**

HEAD OFFICE : 200 BAY ST. PORT MELBOURNE

• AIRCRAFT • MARINE • AUTOMOTIVE • INDUSTRIAL GASKETS • ACCESSORIES MANUFACTURERS •



Cotton core impregnated with "Bakelite" phenolic resins is readily cut into desired thicknesses and sizes.



Here, honeycomb core of paper impregnated with phenolic resins is being assembled with frames and inserts. This material is easily handled.

Honeycomb Engineered Laminates.

New applications show their wide industrial possibilities

Two years ago, virtually a laboratory wonder . . . to-day a practical engineering material with present large fields of application and with continually broadening possibilities for industry. That's the progress report on honeycomb laminates, the new lightweight, high-strength structural panels for building construction, furniture, bulk packaging, and other large volume industrial fields. These materials are finding growing acceptance by architects, engineers, and designers, because, in addition to lightness in weight, they offer such other attributes as high compressive and bending strengths, good thermal insulating properties, a very low water vapour transmission rate, fire resistance, structural durability, resistance to decay fungi, and, among these advantages, extremely low maintenance costs.

HONEYCOMB engineered laminates are a combination of a honeycomb core, "Bakelite" resin impregnants and adhesives, and two relatively thin, dense, high strength faces or skins. The complete unit, from core to faces, exemplifies quality control and precision engineering. The core material itself, writes O. S. Tuttle in the "Bakelite Review", is a cellular structure resembling a bee's honeycomb, with the hexagonal shaped cells formed by walls of

thin sheeting material. This material may be phenolic resin impregnated paper, cotton, or glass fibre, as well as corrugated aluminium foil strips assembled with a specially formulated adhesive, based on "Bakelite" phenolic resin, into a honeycomb block. At present, typical cores are made up of 2 weights of paper, 2 weights of cotton, or 5 weights of aluminium foil. "Bakelite" phenolic resins serve three functions in producing honeycomb laminated panels: As impregnants of the core stock proper; as adhesives to bond the adjacent corrugated sheets to each other; as adhesives to bond the facings to the core stock. For facings, practically any sheet material may be used including stainless steel, aluminium, porcelain, enamelled steel, magnesium alloys, wood veneers, laminated plastics, or a new type asphalt-treated veneer and paper laminate. This new facing material, in which "Bakelite" resins play an important role as the impregnant, is ideal for construction purpose since it is low in cost, strong, and possesses excellent resistance to weathering and abrasion. The exterior grade

is produced in 5-ply and 3-ply thicknesses, consisting of asphalt and phenolic resin impregnated Kraft paper laminated with phenolic resin under heat and pressure to a hardwood birch core. Depending on the selection of these core and facing materials, honeycomb may be produced to form structural panels, decorative panels, or special purpose panels, such as an excellent dielectric at micro-wave frequencies. In production, the honeycomb panels may be made remarkably flat, or produced with compound curves. They are easy and economical to fabricate into assemblies as well.

The present applications of honeycomb reflect the possibilities of this structural material. Architects have on their boards plans for the use of honeycomb for curtain wall panels using "Bakelite" resin-impregnated paper core material, filled with insulation and faced with porcelain enamelled skins. The use of such honeycomb panels for spandrels may well revolutionize building design because of the weight savings possible in the superstructure. Machinery and equipment engineers are also study-

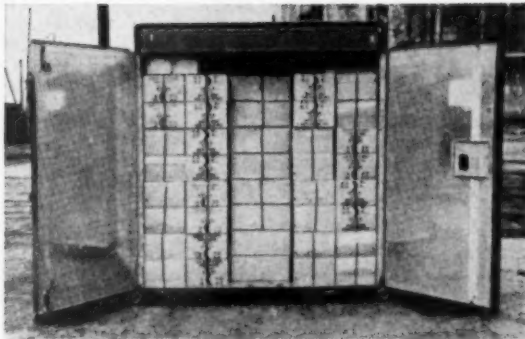
ing the possibilities of all aluminium honeycomb structures as a substitute for heavy steel castings



The components of the box are assembled with special fasteners which provide pressure on the gasketing, sealing the box.



Thorough engineering sets the theme for the construction of honeycomb laminates. Here a strip test is being conducted on this laminate. Small photograph shows facing after being stripped from core.



This transporter or shipping container is built up from honeycomb panels with phenolic resin impregnated core and aluminium facings. It is extremely light in weight, protects contents against damage, moisture, and weathering.

In equipment requiring flat, rigid, lightweight platens.

This strength-weight characteristic of honeycomb laminates proved especially useful in a new lightweight knock-down box, designed to drastically reduce shipping and distribution costs. In the assembly of this pressure-tight box, legs are attached to the bottom panel which serves as the pallet for special equipment. The remaining sides of the box are attached to the pallet with special fasteners which provide pressure on the gasketing for sealing the box. Similar boxes built in sizes up to half a carload capacity can be used for shipment, warehousing and handling of bulk materials between manufacturer and consumer. These boxes can be easily cleaned before assembly for sanitary packaging, their pressure-tight construction minimises moisture charge of merchandise in transit; their palletized construction eliminates rehandling of contents between manufacturer and consumer, and their small volume when knocked down for return, minimizes return shipment charges.

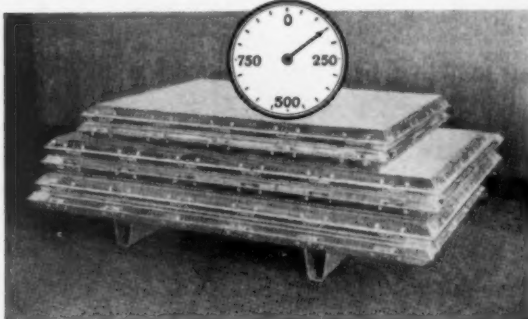


This lightweight knock-down box is easily disassembled for return shipment, thus reducing shipping charges.

signed to drastically reduce shipping and distribution costs. In the assembly of this pressure-tight box, legs are attached to the bottom

panel which serves as the pallet for special equipment. The remaining sides of the box are attached to the pallet with special fasteners which provide pressure on the gasketing for sealing the box. Similar boxes built in sizes up to half a carload capacity can be used for shipment, warehousing and handling of bulk materials between manufacturer and consumer. These boxes can be easily cleaned before assembly for sanitary packaging, their pressure-tight construction minimises moisture charge of merchandise in transit; their palletized construction eliminates rehandling of contents between manufacturer and consumer, and their small volume when knocked down for return, minimizes return shipment charges.

The most natural application for honeycomb core structures, and one where weight saving is extremely important because its value can easily be computed, is in aircraft. Honeycomb has been used in aircraft floor panels, partitions and other secondary structures where the excellent strength-weight and stiffness-weight ratios of the honeycomb structure present substantial weight savings. In one



The lightweight box may be knocked-down to greatly reduced bulk. Sections may be stacked for easy shipping. Complete box weighs only 150 pounds.



This is the interior of the Arctic shelter. New shelters under construction will have supporting members as well as paneling from a honeycomb core.

aircraft flooring installation, a 35 per cent. saving in weight with a 30 per cent. increase in strength was effected. The service life of this floor is expected to be several times that of the floor it replaces. In aircraft service, the simplicity of a panel design, which eliminates many assembled parts, and the low drag characteristics of its mirror smooth surfaces, even when highly stressed, recommend the use of honeycomb.

The development of the aluminium foil honeycomb core opens wide the field of application for this material in primary aircraft structures. At present, honeycomb structures being developed for aircraft include control surfaces, wing panels, bomb bay doors, shear and tension members, and incidental structure. Aluminium cores possess many advantages over other types of core materials such as better physical properties under high humidity and high temperature and much higher modulus of shear rigidity. In addition, they can be preformed for moulding curved or formed panels, and they can be cut extremely accurately ($\pm .006$ inches), or for greater accuracy, may be rolled or pressed to $\pm .002$ inches. An outstanding feature of the aluminium core is that it can be perforated. In patent applications, the manufacturer claims several advantages for these perforations. Perforating improves the bonding process by providing vents for solvents to

escape and provides a method for obtaining pressure between faces and core without using a vacuum bag, since vacuum can be pulled through the core allowing atmospheric pressure to work on the faces. Of maximum importance is that it is possible to proof test each panel without destroying it by applying gas pressure uniformly

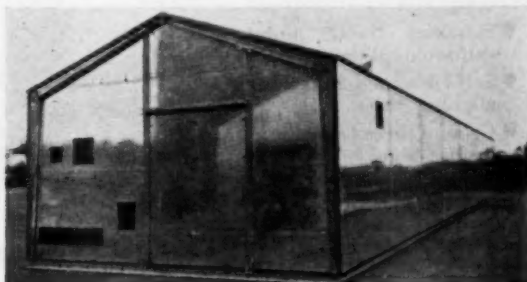


Lightweight knock-down boxes such as this drastically reduce shipping and distribution charges.

on the core structure to test each bonded core edge in tension.

Thoroughly engineered honeycomb laminates are an actuality. Their uses are growing daily, from insulated panels for the construction of refrigerator trailer vans and

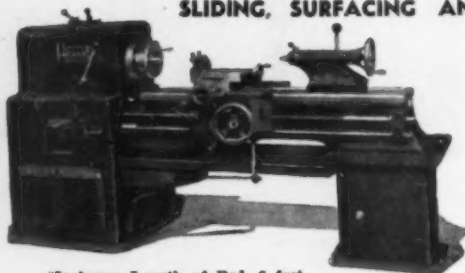
(Turn to page 51.)



This building is a prefabricated structure produced as an Arctic shelter from honeycomb engineered panels. The core material is paper honeycomb, impregnated with "Bakelite" phenolic resins.

"The HARRISON" 7" and 4½" Centre Lathes

SLIDING, SURFACING AND SCREW-CUTTING



Maximum Length of Bed, 6 feet.

NOW
AVAILABLE
TO
AUSTRALIAN
INDUSTRY

•
IMMEDIATE
DELIVERY



Maximum Length of Bed, 40 inches.

These modern geared head machines are supplied complete with electricals and special equipment, including taper turning attachments. Boring and milling tables can also be supplied with length of bed up to 6ft. between centres.

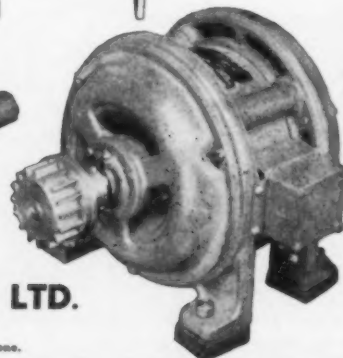
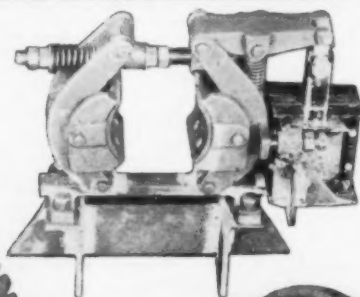
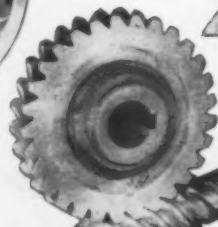
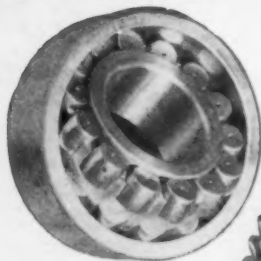
SELLING REPRESENTATIVES:

E. J. HEADLAND & CO., 197 King Street, Melbourne, Vic.
GOODALL & CO. PTY. LTD., 301-5 Kent Street, Sydney, N.S.W.

HI-LIFT COMPONENTS

The
best
of
their
kind!

- Standard frame motor with spline coupling.
- Self-contained brake with self-aligning shoes.
- Ground thread worms and spun bronze rims.
- Ball bearing throughout.



CONSOLIDATED HI-LIFT HOISTS PTY. LTD.

450 ILLAWARRA ROAD, MARRICKVILLE, N.S.W. 'Phone: LL 1221.

QUEENSLAND: Lintell & Benyon, Queen St., Brisbane. ADELAIDE: Unbehaun & Johnstone.



Cooling . . .
BRICK KILNS
TILE KILNS
FOUNDRIES
ALL TYPES OF
HEAVY INDUSTRIES

- A heavy duty, mobile fan which moves up to 12,500 cubic feet of air a minute.
- Available with solid rubber, or pneumatic tyres.
- Head unit adjustable, allowing directing of beam to any point within a distance of 75 feet.
- Steel construction throughout. Complete unit covered by 12 months' warranty.

THE

***Airspeed**
"Mobile"
Mancooler

Manufactured by
BRYANT BROS. Pty. Ltd.
HERBERT ST., ST. LEONARDS,
N.S.W.

Tel.: XF 1004
Makers of AIRSPEED
Air Circulators, Exhausters,
Mancoolers.

(Continued from page 49.)

railroad cars to decorative panels for table tops, counter fronts, and console cabinets. As they become more economical with each advance in production, they may be used for sliding doors, lightweight furniture, and many other applications limited only by the vision of the industrial designer.

NEW FACTORY REGISTRATIONS

NEW SOUTH WALES.

Gaby Models Pty. Ltd., 1 Foster Street, Sydney—Ladies' Clothing.
T. E. Morris Pty. Ltd., Gardner House, 770 George Street, Sydney—Ladies' Hats.

A. L. Myers, Wembley House, 841 George Street, Sydney—Clothing.

Plastyne Products Pty. Ltd., 2 Harrington Street, Sydney—Plastic Leathercloth.

Herbert Caspari Pty. Ltd., Ultimo House, 645 Harris Street, Ultimo—Travel and Leather Goods.

M. Stark & Co., 193 Hay Street, Haymarket—Clothing.

T. & C. Knitting Co., Bowens Bldg., Lee Street, Sydney—Knitted Goods.

Auto & General Plating Co., 10 Little Oxford Street, Darlinghurst—Electroplating.

Colombia Trading Co., 214 Pitt Street, Sydney—Plastic Ware.

Wentworth Plating Co. Pty. Ltd., 43a Beaconsfield Street, Alexandria—Metal Plating.

Winnax Box Factory Pty. Ltd., 10-14 Wyndham Street, Alexandria—Boxes.

Harringtons Metallurgers Pty. Ltd., Raycophone Bldg., 62 Booth Street, Annandale—Metallurgy.

Display Art Studios, 349 Pacific Highway, Artarmon—Woodworking.

Graceline Leather Products, 62 Reserve Road, Artarmon—Leathergoods.

M.F.E. Mfg., 433a Liverpool Road, Ashfield—Clothing.

Coral Outerwear, 99 Beattie Street, Balmmain—Ladies' Clothing.
Hanes & Hellyer, 84 Mullins Street, Balmmain—Mechanical Engineering.

Nicol Bros. Pty. Ltd., 20 Weston Street, Balmmain East—Mechanical Engineering.

PermaSteel Pty. Ltd., 16 Anzac Street, Bankstown—Fabricated Steel.

E. C. H. Refrigerator Cabinets, rear 668 Canterbury Road, Belmore—Woodworking.

Venetian Blinds Service, Dumbledon Road, Beverley Hills—Venetian Blinds.

Ace Footwear Co. Pty. Ltd., 79-81 Princes Highway, Kogarah—Boots and Shoes.

W. N. Darnell & Co., 126 Princes Highway, Kogarah—Joinery.

S. & J. Rhodin, 328 Princes Highway, Kogarah—Joinery.

(Turn to page 53.)

PROGRESS★

MODEL 4E - 1¼" CAPACITY

High Speed Drilling Machine

The "Progress" Motorised Pillar Drilling Machine is of modern design incorporating all the improvements of the latest type of Drilling Machine.

● **THE DRIVE** is direct from a built-on flange-mounted motor, either single or two speed, which is situated on the top of the machine and transmits through a four-speed gearbox directly to the spindle.

● **ALL GEARS** are of case-hardened 3% nickel steel, the shafts run in ball bearings and the whole box is totally enclosed, while all moving parts run in an oil bath. The speeds are easily changed by levers arranged at the front of the head.

● **AUTOMATIC FEEDS** are operated direct from the main gearbox through a worm gear and cone clutch to the spindle sleeve.

● **TEE-SLOTTED BASE** can be used by swinging the Circular Table around the column.

● **STURDY DESIGN** of this Drilling Machine ensures rigidity and efficiency in operation.

Made in England

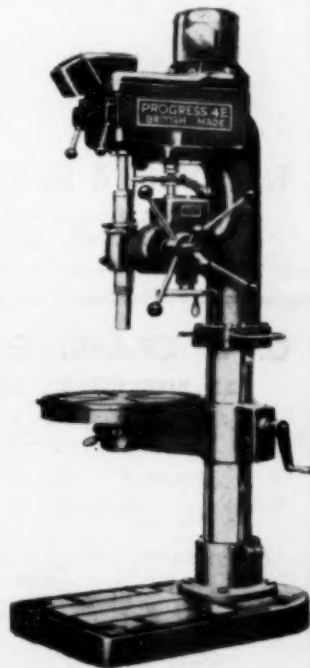
AVAILABLE FOR IMMEDIATE DELIVERY

For all your MACHINE TOOL problems, consult:

"The Machine Tool People"

CLEVELAND MACHINERY CO. PTY. LTD.

193-195 CLEVELAND STREET, REDFERN, N.S.W., AUSTRALIA
Telephone: MX 3394. Telegrams: "CLEVCO," Redfern.



FIRST IN THE FIELD



The Andries organisation pioneered the craft of Diamond Cutting in Australia and were the first to undertake the manufacture of Industrial Diamond Tools in this country.



If you require Diamonds or Diamond Tools for any application, consult —

E. ANDRIES & SONS PTY. LIMITED

245 PITT STREET, SYDNEY, N.S.W.
360 COLLINS STREET, MELBOURNE, VIC.

MA 3995.
MU 1513.

G. E. CRANE & SONS LTD.

33 PITT STREET, SYDNEY, N.S.W.

Manufacturers of

ALUMINIUM

Sheet, Strip, and Circles, Aluminium Alloy Ingots.

COPPER

Sheet, Strip, and Circles, Copper Sheathing.

BRASS MUNTZ'S METAL & SILICON COPPER ALLOYS
IN SHEET, STRIP, AND CIRCLES, NAVAL BRASS SHEETS AND SHEATHING.

LEAD — Sheet, Pipe, Dampcourse, etc. **PURE TIN** — Sheet and Pipe.

NON-FERROUS METAL EXTRUDED PRODUCTS

Collapsible Tubes for Dentifrices, etc.

PLASTIC MOULDED PRODUCTS.

SHEET METAL PRODUCTS FOR BUILDING TRADE.

BRASS FITTINGS FOR WATER, SEWERAGE & GAS SERVICES

"SIRIUS," "METEOR" AND "PLANET" Plated Brassware.
"STANWAY" Plumbers' Brassware.

MELBOURNE:

Crane (Vic.) Pty. Ltd.,
400-402 Victoria Street,
North Melbourne.

Head Office:

33 Pitt Street,
SYDNEY:

BRISBANE:

C.O.N. Pty. Ltd.,
180 Queen Street.

J. Gadsden Pty. Ltd.

Manufacturers of

PRINTED, AND PLAIN
CANS. — STEEL CON-
TAINERS. ALSO, CANVAS
GOODS, CALICO AND
HESSIAN BAGS

Factories at

AUSTRALIA—

Melbourne, Sydney, Adelaide,
Fremantle, Hobart and Albury.

NEW ZEALAND—

Wellington, Christchurch, Auc-
land, and Dunedin.

Head Office — Abbotsford Street, West Melbourne.

T A L C FIRST QUALITY

At all times of Australian origin and
wholly processed in our works from the
raw materials

SUITABLE GRADES FOR ALL PURPOSES



Products Standardised under Laboratory
Control. Interstate and Overseas enquiries
welcomed.

S. N. RODDA Pty. Ltd.

Reg. Office and Mills:

65 Beach Street, Port Melbourne, Vic.

P.O. Box 16, Port Melbourne

Cables and Telegrams: "ADDORNS."

Tel.: MX 4638 (3 lines).

MANUFACTURERS

Do your products look as good as they are?
— are they appealing to the eye?

If not—Let our artists design a colourful
decoration with an arresting trade mark!

Then—Watch the sales curve rise!

TRANSFERS

MELBOURNE CHT 1367
BRISBANE B 4761
LAUNCESTON 1046

**SELEX
DECAL**
INDUSTRIAL LIMITED

SYDNEY MA 2409
ADELAIDE CHT 8424
PERTH B 3650

FOR WOOD METAL PAINT PLASTICS GLASS ENAMEL LEATHER

(Continued from page 51.)

K. S. Cheers, 102 Railway
Parade, Kogarah—Ladies' Hats.
Jax Products, 613 Canterbury
Road, Lakemba—Woodworking.

Scotia Wood Products, 41 Hu-
bert Street, Leichhardt—Wood-
working.

Elizabeth Gloria Manufactures,
22 Jarrett Street, Leichhardt—
Clothing.

G. H. Nihill, 162 Norton
Street, Leichhardt—Clothing.

Beverge & Perryman, 20 Little
Toothill Street, Lewisham—Mech-
anical Engineering.

R. Sanderson, 44 Derby
Street, Lidcombe—Mechanical En-
gineering.

H. J. Page & Co., 32 Egerton
Street, North Lidcombe—Orna-
mental Iron Work.

J. A. Higginson, 153 John
Street, Lidcombe—Joinery.

Dickson & Johnson, cnr. Parra-
matta Road and Bachel Avenue,
Lidcombe—Sheet Metal Work.

H. A. Diprose & Co., Wilson
Street, Liverpool—Timber and
Joinery.

Peter Martyn, 9 Corrie Road,
North Manly—Joinery.

T. H. Muldoon & Co., rear 17
Cadogan Street, Marrickville—
Mechanical Engineering.

Clinton Shoes, 42 Silver Street,
Marrickville—Boots and Shoes.

Davidson Engineering Co. Pty.
Ltd., 577 Gardiners Road, Mascot
—Mechanical Engineering.

J. L. Deroose, cnr. Barden
Street and Powder Works Road,
Nth. Narrabeen—Tile and Brick
Cement.

Vic. Ewen & Son Pty. Ltd., 1a
Commodore Street, Newtown—
Mechanical Engineering.

Love & Sargeant, 25 Erakine-
ville Road, Newtown—Mechanical
Engineering.

Astra Leathergoods Mfg., 288
King Street, Newtown—Leather-
goods.

Turner Rainford & Co., 85
Walker Street, North Sydney—
Leather.

C. B. Asboc, 1b Gurner Street,
Paddington—Ladies' Clothing.

G. & S. Shoe, Fausday Road,
Padstow—Boots and Shoes.

Aeroshade Products, 14a Harold
Street, Parramatta — Venetian
Blinds.

Berkely Leathergoods Co., 144
New Canterbury Road, Peter-
sham—Leathergoods.

Pan-Tex Knitting Mill Pty. Ltd.,
508 Parramatta Road, Petersham
—Knitted Goods.

VICTORIA.

Bassett & Grandy, Lake Bunga
(via Lakes Entrance)—Saw Mill.
Lowe, A. H., Nowa Nowa—Saw
Mill.

Wolfsdorf & Khem, 94 Den-
mark Street, Kew—Knitwear.

Lederberger & Kosma, 297 Vic-
toria Street, West Melbourne—
Millinery.

McKenna, K. & J., 39 Puckle
Street, Moonee Ponds—Curtains.
Larmour, R. W., Broadway,
Wycheproof—Joinery.

Cooper, A. T., Lake Bogs—
Cement Bricks.

Waterproof Garments, Bank
Street, Avenel—Waterproof Gar-
ments.

Davis, L. E., 7 Gardiner Street,
W. Brunswick—Cases.

Stielow, T. A., rear 23 Weston
Street, E. Brunswick—Fancy
Glass.

Yellin, A. J., 140a Cotham Road,
Kew—Clothing.

Ryan, McClary, Twomey &
Rowlands, Buckley Street, Noble
Park—Clothing.

Mance, C., 227 Johnson Street,
Fitzroy—Shoes.

Richards, E. C., 323 Lyttleton
Terrace, Bendigo—Engineering.

Hanrahan, G. A., cnr. Fulton
and Millgate Streets—East Oak-
leigh—Brass Turning.

Wilson, L. W., 709 Pleasant
Street, Ballarat—Sheet Metal.

Industrial Companies and Firms

NEW SOUTH WALES.

CANVIN & COLES PTY.
LTD.—Capital: £25,000. Manufac-
turers of electrical, mechanical
and engineering goods. Sub-
scribers: John T. Bloomfield and
William J. O'Brien. Registered

EVERY KIND OF INDUSTRY CAN USE AN ELECTRIC TRUCK



No, sir, your "HANDLING" problem is not different. Give us
details and specifications of your problem and we shall show you
a case history of a similar problem, solved by the use of an
Electric Industrial Truck.

The above Electric Truck is in use at the Sydney works of Crompton
Perkinson (Aust.) Ltd. and is powered by an Exide Kathanode
Battery.

Different in construction from other batteries, the "Kathanode"
possesses ALL FOUR of the essential characteristics demanded of a
battery for Electric Industrial Truck service:

1. High Power Ability
2. High Efficiency
3. Great Ruggedness
4. Long Life

Send for interesting Exide Kathanode Battery
Catalogue on Electric Industrial Trucks



EXIDE BATTERIES of AUSTRALIA
PTY. LTD.

44 Bridge Street, Sydney

STUDS . . .

**TIE RODS. Cut or Rolled Threads
All Thread Screws**

Specially selected steel available for pieces which are to be welded. 3/16-in. to 1-in. diameter and all lengths.

PROJECTION WELDING BOLTS (not illustrated).

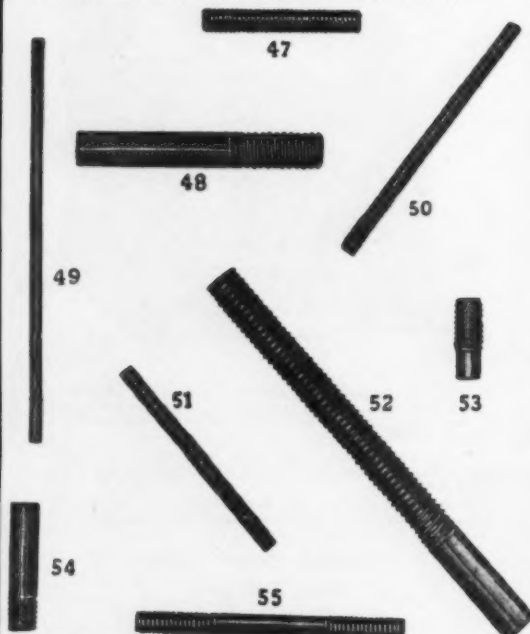


Illustration No. 7.

Any like product made to sketch, sample or order by

Steelcraft

Pty. Ltd.

206-210 Willoughby Road, Crow's Nest, Sydney, N.S.W.

Telephone: KB 4461



For RIVETS
in Aluminium, Brass, Copper and
Steel, Precision Quality.

SCREWS

Roll Thread or Milled from the
Bar, 1/8" to 1 1/2" diameter.

REPETITION WORK on latest type automatic
machines.

G. W. MARNER PTY. LTD.

388-394 ELIZABETH STREET, SYDNEY

Telegrams and Cables: "MARNER," Sydney.

'Phone: MA 1186.

Use This **DYNAMIC BALANCING** Service

**TO END VIBRATION, CUT COSTS DUE
TO UNNECESSARY WEAR AND TEAR**



We do not manufacture
Balancing Machines for
sale. Our business is to
utilise our patent rights to
perform this Balancing
Service for our clients.

Our Dynamic Balancing Service put to work on
your Fans, Rotors, Pump Impellers, Centrifuges,
Shafts, Pulleys, Armatures, Turbines and Turbine
Runners eliminates injurious vibration, provides
smooth, efficient operation, prolongs the life of
valuable equipment.

We are also equipped to provide experienced
repair and maintenance service for all your electrical
and mechanical equipment and give valuable
information on how to achieve safe, more efficient
operation from existing machines.

JONES & RICKARD PTY. LTD.

MANUFACTURERS OF SPECIALISED ELECTRICAL EQUIPMENT

525 ELIZABETH STREET, SYDNEY. MX 2097.

Office: Sydney. (Lodged by A. N.
Harding & Breden, Wingello
House, Angel Place, Sydney.)

**GLOBAL ENTERPRISES PTY.
LTD.**—Capital: £5,000. Moving
picture film manufacturers. Sub-
scribers: Wesley M. Barrett and
John S. Aird. Registered Office:
Sydney. (Lodged by John S.
Aird, 64 Bayswater Road, Dar-
linghurst.)

**HALVA PRODUCTS PTY.
LTD.**—Capital: £25,000. Manufac-
turers of sweets, chocolates and
candies. Subscribers: John D.
Andronicus and Kathleen Adroni-
cus. Registered Office: Sydney.
(Lodged by M. G. Tilbury, 28
Martin Place, Sydney.)

**HARTNETT DISTRIBUTORS
(N.S.W.) PTY. LTD.**—Capital:
£100,000. Motor vehicle manufac-
turers. Subscribers: James H.
Knox and Warren W. Alderton.
Registered Office: Sydney.
(Lodged by Remington & Co., 17
O'Connell Street, Sydney.)

**MANDER - KIDD PRINTING
INK (A.) PTY. LTD.**—Capital:
£20,000. Manufacturers of paints,
varnishes, colours and inks. Sub-
scribers: A. Ball and Robert G.
Fewtrell. Registered Office: Syd-
ney. (Lodged by Whitehead,
Ferranti & Green, 92 Pitt Street,
Sydney.)

**STRUCTURAL SERVICE PTY.
LTD.**—Capital: £10,000. Manufac-
turers of roof trusses. Sub-
scribers: Clifford P. Turvey and
Rerek W. Maguire. Registered
Office: 30 Shadforth Street, Mos-
man.

VICTORIA.

**NEW PROCESS CRUMPET
CO. PTY. LTD.**—Nominal capital:
£15,000. Incorporated in N.S.W.
Directors: B. R. Harris, R. J.
Hastings, A. J. Parsons, A. F.
Prudames, R. L. Gale and G. J.
Thame. Victorian Office: 1418
Malvern Road, Tooronga.

R. MADDEN & CO. LTD.—
Nominal capital: £20,000; manu-
facturers, importers, etc. Sub-
scribers: Russel Maddern, C. K.

Wright, M. M. Maddern, T. H.
Maddern and R. A. Maddern.

NEW FLOAT SWITCH FEATURED BY NILSEN.

Motor-driven pumps in service
require accurate and dependable
float switch control for high and
low water levels.

The Nilsen new precision snap
acting float switch has positive
"quick make and break", although



Float Switch.

compelled to follow the slow
movement of the water level.

Designed for operation in the
motor contactor circuit, it is a
compact but robust assembly, with
a weatherproof cast iron case.

A simple operating mechanism
combines with a snap acting
double throw switch enclosed in
a sealed moulded case. All con-

tacts are solid silver. Terminals are located in a convenient position for easy connections. A readily removable cover facilitates a general inspection with the switch in operation.

The float switch is lever operated by a chain and a $\frac{1}{2}$ in. diameter cistern pattern float. Provision is made for simple adjustment of the float and chain, as well as for "sump" or "tank" application.

Type tested units have completed more than a million operations with their mechanical efficiency unaffected.

This new float switch is manufactured by Oliver J. Nilsen & Co., Pty. Ltd., 24 Palmer Street, Fitzroy, Victoria.

A NEW LIGHT IN THE SKY.

The design of an efficient airport beacon presents a problem which scarcely troubles the nautical lighthouse designer—the effect of the altitude of the navigator upon the apparent visibility of a revolving beam.

A new airport beacon solves this problem by using a "square" beam; from whatever altitude angle it is viewed, up to the limit of visibility, the breadth of the beam is the same and the duration of the flash constant. Since beacon visibility is a product of duration of flash and intensity the Square Beam beacon marks a spectacular advance in aerial navigation.

The standard 2kW revolving beacon gives alternate white and green flashes and is driven by a 1 h.p. motor through a reduction gear with a friction drive to take up starting torque. To ensure silent and smooth running with no lubrication of the transmission gear a non-metallic pinion made of "Permal" is meshed with the steel driving gear. Gears of this densified wood laminate are practically everlasting and are unaffected by climatic conditions or termites.

These Square Beam beacons will be in service this summer at Birmingham (Edmond), Liverpool (Speke), Belfast (Nutts Corner), Manchester (Ringway) and London (Heath Row) Airports, and many are on order, four having already been despatched to New Zealand.

BRITISH INDUSTRY BOOMING.

According to reports from London, Britain is in the throes of the biggest "boom" in its industrial history. For never before have so many goods rolled off the production lines nor so many workers been in jobs. As a matter of fact, practically every major British industry is handling record orders. The labour force is to-day 22,252,000, with the jobless at a token 380,000. Exports of manufactured goods for the first four months of 1950 were valued at £689,000,000.

MOTORS • GENERATORS



GRINDERS • BUFFERS

in the smaller ratings



Please address your interstate enquiries to—

QLD.: Electrical Agencies, 104 Edward St., Brisbane.
VIC. & TAS.: Harold Beer, 364-372 Lonsdale St., Melbourne, S.A.: R. A. Haynes, 20 Franklin St., Adelaide, W.A.: Carlyle & Co. Ltd., 915 Hay St., Perth, and 397 Hannan St., Kalgoorlie (for all products); also Malloch Bros. Ltd., 52-54 William St., Perth (for generators only). N.S.W.: Grinders and Buffers—Paul Witzig & Co. Pty. Ltd., 55 York St., Sydney; Motors and Generators—Direct.

G. M. E. ELECTRIC MOTORS PTY. LTD.

38-42 LAYTON STREET, CAMPERDOWN, N.S.W. 1410-1411, 1412-1413
Telegrams and Cables: "GEMERCO SYDNEY"



TRIEFUS

PTY. LTD.

17 O'CONNELL STREET, SYDNEY

Cables, Telegrams: Triefus Sydney.
Telephones: BW 8068, BW 8069.

INDUSTRIAL DIAMONDS For All Purposes

DIAMONDS FOR—WHEEL DRESSING WIRE
DRAWING, DRILLS AND MECHANICAL USES,
DIAMOND BOART, DIAMOND SPLINTS, DIAMOND
POWDER (Purified All Grades).

AUSTRALIAN BRANCH OF TRIEFUS, LONDON.



Famous the world over—

DRAYTON ARMSTRONG Trouble-free STEAM TRAPS

DRICO Thermostatic Traps for light duty

ALSO

Strainers, Sight Glasses, Temperature Regulators,
Pressure Switches and all types of Controls and Regulators.
Made by Drayton Regulator & Instrument Co. Ltd., Middlesex, England.
SOLE AGENTS IN AUSTRALIA

Basil V. R. Greatrex

PROPRIETARY LIMITED

151 SUSSEX ST., SYDNEY, N.S.W.
Telephone: BX4717 (2 lines)



PATENT & TRADE MARK NEWS

Complete specifications lodged with the Patents Office are open to public inspection almost immediately after their lodgment. Interested persons are now able to obtain the details of an invention for which protection is being sought.

Provision is also made (Patents Act, 1946) for an applicant to obtain damages, if infringement occurs, from the date of publication of the application. A rule of practice has been established whereby an application will be examined more speedily when a prima facie case of alleged infringement is proved.

Particulars of the necessary procedure will be supplied by any Patent Attorney practising in the Commonwealth.

PATENT SPECIFICATIONS ACCEPTED

MOBILE HOIST FOR BUILDING MATERIALS.

137,031.—S. Bennett, N.S.W.

A mobile hoist for concrete or other building material comprises: a scoop runway consisting of a main frame having base member supporting a load carrying member pivotally mounted at the bottom end to a base on a wheeled chassis; a telescopic extension of the scoopway with a framework supporting the load carrying member; side pedestals on the base having arcuate rack members and dropper arms from the framework with pawl member to engage racks; hoisting cables anchored to the dropper arms passing over sheaves to a winch; and scoop with trip mechanism dragged from loading position on to and along the scoopway to a discharge point. A delivery hopper with chute affixed to the

telescopic extension and a supplementary trolley adapted to travel on channel rails are also described and claimed.

FASTENING DEVICE FOR SLIDING DOORS.

137,046.—F. C. Douglas, Vic.

To enable a door to be readily released and slidably moved, a fastener is comprised of a housing adapted to accommodate a latch bolt, latch actuating means, such as a handle, operatively connected to latch bolt by lever arm, and a finger-tip grip portion on the housing adapted to co-operate with the handle thereby to constitute a squeeze grip.

CONNECTOR FOR DISCHARGE TUBES.

137,016.—Standard Telephones and Cables Pty. Ltd., N.S.W.

A flexible low impedance connection to the anode of an electron discharge device has two rigid portions linked by a flexible portion. Rod may be hollow

for the purpose of conducting a cooling fluid. The intermediate part is in the form of a cylindrical tube of thin metal, as copper, with two extensions which fit into slots in the rods, the diameter and length being about equal with the diameter of the rods. The arrangement is particularly suitable in cases where the connector serves also as part of a Lecher line due to its low impedance.

COIL WINDING MACHINE.

137,045.—CHW & Bunting Pty. Ltd., Vic.

A machine for winding centre tapped coils by winding two halves simultaneously and at the same time twisting the wires together in a transposing twist comprises a spindle carrying a number of bobbins to which the wire is fed pre-twisted by rotatable pinions, each of which has holes through which each wire is fed separately. The pinions are actuated by a rack which is reciprocated by pin en-

gaging cam slot of drum operatively connected to the winding spindle, thus as the bobbins are rotated the wire, fed through pinions to each bobbin, is twisted first one way and then the other as the rack reciprocates.

SPRINGLESS PORTABLE PUMP. 137,044.—Moffat-Virtue Ltd., N.S.W.

To obviate the fitting of a spring or other known means to return each piston, a portable pump comprises a pair of plunger pumps having their cylinders substantially coaxial and having the outer ends of the cylinders directed towards each other, a shaft located between the outer ends of the pump plungers, an eccentric mounted on the shaft and contacting the outer end faces of the plungers, and adapted when rotated to apply an inward thrust to each plunger in turn, and

PATENTS, TRADE MARKS,
DESIGNS AND COPYRIGHTS
AUSTRALIA AND OVERSEAS

GRIFFITH, HASSEL & GRIFFITH

PATENT ATTORNEYS—EST. 1896.

Ashcroft House, 97 York St., Telephone
SYDNEY, N.S.W. BX 2649

PHILLIPS, ORMONDE, Le PLASTRIER & KELSON

ESTABLISHED A.D. 1880

CECIL Le PLASTRIER. GEOFFREY SLY. BERTRAM C. FITZPATRICK.

TRADE MARK AGENTS — PATENT ATTORNEYS

PROVIDENT LIFE BLDG., 37-41 QUEEN ST., MELBOURNE

Telephone: MB 2594 (2 lines)

Osborn F. Cartwright

PATENT AND TRADE MARK
ATTORNEY

350 George Street, SYDNEY

Telephone: BL 1894

Fellow Institute Patent Attorneys of
Aust., Inc.



**Deeper Penetration
LOUDER VOLUME!**



**WARNING
SIGNALS**



Models "E" and "Y," as illustrated, are popular among many of Australia's leading factories because of their commanding, penetrating note distinct from factory noises. . . . Easily installed. . . . Single trumpet projector. . . . non-weatherproof (Model "E") for indoor use. . . . weatherproof (Model "Y") for outdoor use.

For Operation off A.C. or D.C. Supply. Illustrated list of complete range of models on application.

Obtainable from All Wholesalers and Electrical Houses throughout Australia.

Manufactured by:
**R.V.B.
ENGINEERING
PRODUCTS
PTY. LTD.**

Spotswood, Victoria.

WB/67

**SD SOLUBLE
SILICATES**
of Soda Potash
True to Specification.

Silicate & Dolomite Co. of Aust.
Pty. Ltd.
ALLEN STREET
PYRMONT, N.S.W.

Patents, Designs, Trade Marks and
Copyrights of all Countries

FREDERICK B. RICE

Ing. Dipl.—Fellow, Inst. Pat.
Att.'s Aust.

Club Chambers, 96 Phillip Street,
Sydney, N.S.W. Tel.: BW 4678.

ARTHUR S. CAVE

PATENT AND TRADE MARK
ATTORNEY

Successor to

FRED WALSH

(Incepted 1882)

16 BARRACK ST., SYDNEY, N.S.W.

'Phone: BX 4128

link means connecting the plungers for simultaneously moving each plunger outwardly when the other is moved inwardly by the eccentric.

RAILWAY POINTS OPERATING MECHANISM.

137,047.—H. N. Osborne, Vic.

In a hydraulic system, displacement of fluid by primary actuating means transmits pressure through the system to actuate the switch points, lock them in position and provide indication of the condition thereof. Plunger actuated by a lever transmits fluid through pipes to and from the ends of a cylinder in which is a piston connected to the points by a rod. Pistons in cylinders connected to the cylinder operate locking bars to unlock and lock the points while surplus fluid in the pressure line enters cylinder to raise a spring loaded piston therein which is connected to an indicator to indicate the condition of the points.

LIQUID POURING CONTAINERS.

137,050.—C. H. Malpas, Vic.

A container for pouring fluids, having a top plate with a filling opening and a nozzle associated with a gasket for sealing the nozzle to the top plate, is characterised by the filling opening having a circular ramp adapted to engage an externally screw-threaded neck of the nozzle. In a modification, the nozzle is provided with an external screw plug.

THERMAL OVERLOAD RELAY.

137,072.—Oliver J. Nilson & Co. Pty. Ltd., Vic.

To provide compensation for ambient temperature variations, an independent latch, pivotally mounted, rests on a catch plate of a bar arranged to control the making and breaking of contacts in a secondary control circuit of the relay. The latch limits the movements of the release bar and the bimetal strip is spring biased to rest on the catch plate so that deflection under temperature rise is magnified.

MACHINE FOR WASHING, RINSING AND WRINGING CLOTHES.

137,076.—F. Grosbek, N.Z.

A base secured to perforated tubes is adapted to be inserted in a boiler, a cover slidable on the tubes, being compressed on to the clothes by a screw member. Means direct jets of water into the lower ends of the tubes when the device is removed from the boiler for rinsing of the clothes.

In a modification a hand wheel on the threaded member is supported by a yoke for raising and lowering the device.

VACUUM MOPS.

137,078.—M. D. Fitzgibbon and W. K. McAtee, W.A.

To control the degree of vacuum, a mop body fitted with holes is provided with adjustable air admission valves.

In a modification a rotatable sliding valve is associated with



**CONTROL
TEMPERATURES
WITH
"DOBROS"
DIAL
THERMOMETERS**

MADE IN AUSTRALIA
BY

Dobbie Bros. Thermometers Pty. Ltd.
80 LITTLE LONSDALE STREET, MELBOURNE



STEEL SPROCKET CHAIN

Formed from special steel strip, heat-treated under pyrometric control and tested for pitch and tensile strength.

Links No. 42, 42KI, 45, 5i, 5IKI, 52, 52KI, 55 and D (or 72½).

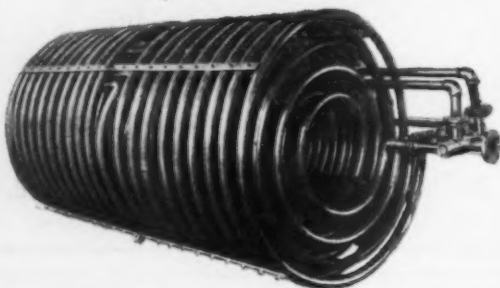
There is a big demand for Sunshine Steel Sprocket Chain, and intending buyers are advised to place their orders early.

H. V. McKay Massey Harris Pty. Ltd.
SUNSHINE HARVESTER WORKS, SUNSHINE, VIC.

Manufacturing also—Bright Steel Shafting, Welded Coil Chain
ENGINEERING SALES DEPARTMENT: 401 COLLINS STREET
MELBOURNE, C.I. 'PHONE: MU 6379.

INDUSTRIAL COILS

For every Purpose



Industrial Coils for every purpose—Copper, Stainless Steel, and Mild Steel—to any size or design to suit your particular requirements.

Your inquiries are invited.

THOS. WALKER & SONS LTD.

JOHN P. WALKER, Managing Director

OFFICE AND FACTORIES—220-6 PARK STREET
Phone. Mx 5115 (3 Lines) SOUTH MELBOURNE

the tubular extension of the suction member.

BRACKEN FERN DIGGER.
137,085.—E. J. Robinson and M. W. S. Woolard, N.S.W.

To facilitate eradication of fern or other vegetation an apparatus comprises suitably arranged and weighted knife-carrying roller elements adapted to be propelled over the ground, and means to control movement of the roller elements.

AN ELEVATING GOODS TRANSPORTER.

137,084.—B. V. Wood, N.S.W.
A goods transporter which will grip and elevate an article and then transport same comprises a wheeled steerable chassis having an elevator thereon, and arms

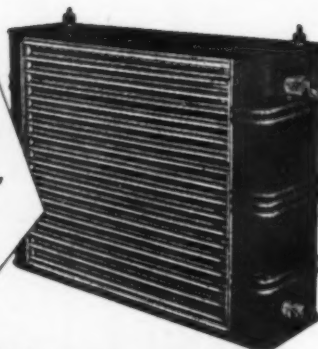
associated with the elevator and incorporating means whereby an initial hoisting movement of the elevator moves the arms and retains same in a gripping position during subsequent hoisting and lowering movements of the elevator.

AN AUTOMATIC COURSING APPARATUS.

137,085.—New South Wales Trotting Club Ltd., N.S.W.

A mechanical coursing apparatus for dog race starting and the like, adapted to be automatically operated upon the passage of an imitation lure is characterized by a depressible switching element set slightly but resiliently against the line of the path of the lure and having out-curved ends and guide pins associated with guide elements, connected to the upper and lower guide rails for the lure, said guide pins holding helical springs between said switching element and guide elements. The depressible switching element carries a laterally disposed push rod, anchored to guide rails by springs, and having a free end adapted to actuate, when moved sideways, a pivoted insulated contactor arm in the unit, the other end of which is adapted as an

THE ONLY
**UNIT
HEATER**
with the
"AEROFIN"
COIL



Carrier UNIT HEATERS

The AeroFin Coil, which is exclusive to Carrier, was designed by their engineers to meet every requirement of modern advanced fan systems of unit heating. The Carrier Unit Heater is efficient, adaptable and—

Engineered as a Complete Unit for Greatest Economy

Right now is the time to get in touch with Carrier engineers about your prospective heating requirements. Practical suggestions from Carrier's experienced and trained technical staff can mean important savings for you. Types for practically every requirement are available, for high and low pressure steam, hot water or electrical elements.

Write or phone to-day for complete information.

Carrier

CARRIER AIR CONDITIONING LIMITED

85-88 Bourke Street,
East Sydney, N.S.W.
Phone FA 7144

15-17 Lincoln Square,
South Carlton, N.S.
Melbourne, Vic.
Phone FJ 4234

Fenney's Building,
298-308 Queen Street,
Brisbane, Q'ld.
Phone B 8148

**TRADE MARK
APPLICATIONS**

95,524. "Stripo." Paint, lacquer and varnish remover.—Quickatryp Chemical Pty. Limited, 48 Belmont Street, Alexandria, N.S.W.

94,317. "Hormogen." Chemical fertilizers. Branded. Sales Limited, Swinley Works, Bath Road, Crippenham, Buckinghamshire, England.

90,055. "Carbonite." Abrasives, abrasive grains, abrasive articles and grinding wheels.—General Abrasive Company, Inc., College Avenue and Hyde Park Boulevard, Niagara Falls, New York, U.S.A.

94,291. The letters "P. & B." inside a leaf shaped design. Knitting pins or needles, rug needles and crochet hooks, etc.—Patons & Baldwins Limited, Clark Bridge Mills, Halifax, England.

94,829. "Spherol." Lubricating oils and greases.—C. C. Wakefield & Company Limited, 46

electrical contact surface to engage upon actuation a fixed contact to complete the circuit through the solenoid in the release unit. The energized solenoid acts upon an armature to release catch of door on stalls, through mechanical connections, the said door moving upwards under the action of springs.

A holding solenoid for the pivoted contactor arm is also claimed.

HOLDER FOR SANITARY ROLLS.

137,082.—W. F. Flesselles, N.S.W.

Quick loading and unloading is readily effected by a holder consisting of a substantially U-shaped frame connected by its base to a bracket with one or more eyes or loops formed in the frame to provide spring flexibility thereto and having formations consisting of a boss or short cylinder affixed to each of the inner ends of the limbs for engagement with the ends of the central opening of a sanitary roll. Alternatively a number of convolutions, shaped from the in-turned and lengthened ends of the limbs, may replace the cylinders.

METAL SPRAYING

(Schoop Process)

**RUST-RESISTING COATINGS
METAL COATINGS PTY
LTD.**

16 Bridge Road, STANMORE
N.S.W. 11 Phone: LA 2833
Anti-Corrosive Engineers and
Sand Blasters.

Grosvenor Street, London, England.

92,882. A design of shield shape, with the letters, "SV", interlocked. Liquid fuel for internal combustion engines.—Vacuum Oil Company Proprietary Limited, 29 Market Street, Melbourne, Victoria.

92,358. "Telcothene". Electrical insulating materials.—Telegraph Construction & Maintenance Company Limited, 22 Old Broad Street, London, E.C.2, England.

94,126. A label design showing the words "Cherry Rivet". Rivets, rivet guns.—Cherry Rivet Company, 231 Winston Street, Los Angeles, California, U.S.A.

87,109. A design of the word "Twylite". Electric jugs.—Twylite Trading Co., 109-111 Little Lonsdale Street, Melbourne, Victoria.

94,063. A design showing, inter alia, the words "Royal Doulton, London". Porcelain and earthenware.—Doulton & Co. Limited, Doulton House, Albert Embankment, London, S.E.1.

93,599. "Stanco". Foundry core binders.—Standard Chemical Co., 99 King Street, Melbourne, Victoria.

94,737. "Trojan". Engines.—Westinghouse Rosebery Pty. Limited, Joynton Avenue, Waterloo, N.S.W.

94,738. "Trojan". Engines for agricultural and horticultural purposes.—Westinghouse Rosebery Pty. Limited, Joynton Avenue, Waterloo, N.S.W.

94,568. A design of the word "Mondia". Watches of all kinds and watch movements.—Paul Vermot & Co., S. A. Fabrique D'Horlogerie Mondia, 148, rue du Parc, La Chaux-de-fonds, Switzerland.

95,727. "Majex". Watches and clocks.—Bloch & Gerber Ltd., 46 York Street, Sydney, N.S.W.

93,718. "Elastoplast". Instruments, apparatus and contrivances for surgical purposes.—T. J. Smith & Nephew Limited, Neptune Street, Hull, England.

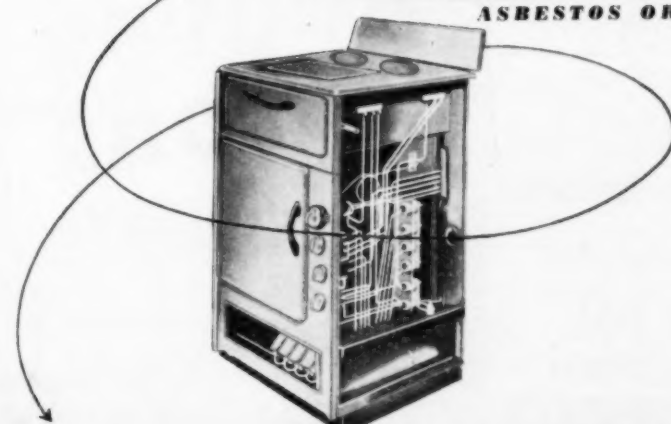
94,453. "Starlite". Pedals, hubs and other bicycle component parts.—Centrix Proprietary Limited, Clarendon Street, Spencer Street, Bridge, South Melbourne, Victoria.

95,612. A name plate showing, inter alia, the words "Wee Jet". Gas fired radiators.—Comenge Pty. Limited, 7 Jamieson Lane, Sydney, N.S.W.

95,795. "Vencore". Core-boards, core-boards with veneers, etc.—Vencore Veneers Pty. Limited, Newcastle Road, Wallsend, N.S.W.

86,773. A label design, showing, inter alia, the words "The Master". Brushes and brooms.—Adelaide Brush Co., 222-232 Port Road, Alberton, South Australia.

If IT CALLS FOR WIRE WITH HEAT RESISTANT COVERING— ASBESTOS OR GLASS



... it calls for Bambach

Where conditions necessitate electrical conductors insulated to resist high operating temperatures—in electric ranges, furnaces, domestic electric stoves, etc.—call Bambach, suppliers of a wide range of glass or asbestos covered wires for high temperature conditions.

- ★ MANUFACTURERS OF:
LITZ WIRE • SILK AND COTTON INSULATED
MAGNET WINDING WIRES.
- ★ A DISTRIBUTING MERCHANT FOR:
INSULATED WIRES
(AUST.) PTY. LTD. (Formex Magnet Wire)
- ★ BRAIDED PRODUCTS PTY. LTD.:
COPPER BRAIDINGS • FLEXIBLE STRANDING
FLAME-PROOF CABLES, etc.
- ★ BAKELISED PAPER TUBES.

IN VICTORIA: Electrical Insulation Products, 594 Elizabeth St., Melbourne; IN S.A.: C. N. Muller, Warando Bldg., Crossfell St., Adelaide; IN Q.L.D.: Rolle T. Williams, Inertia House, Edward St., Brisbane.



ELECTRICAL CONDUCTOR

SERVICE

★ ★ 52-54 PARRAMATTA ROAD, STANMORE, N.S.W. PHONE LA3685 ★ ★

RAW MATERIALS

Founded 1882

CHEMICALS, CRUDE DRUGS, DRY COLOURS, WAXES,
ESSENTIAL OILS, GUMS, HERBS, METAL FOILS

H. J. LANGDON & CO. PTY. LIMITED

500 COLLINS ST., MELBOURNE, VIC. Tels.: MB 2511-5.

Distributors for
"Cellophane" FILM
Registered Trade Mark of
BRITISH CELLOPHANE LIMITED
Telegrams: "LANGDON," Melbourne.
Sydney Office: 8 Bathurst Street



**Backed by the same
engineering skill
that has built
over 8,000,000
Hoover Cleaners**

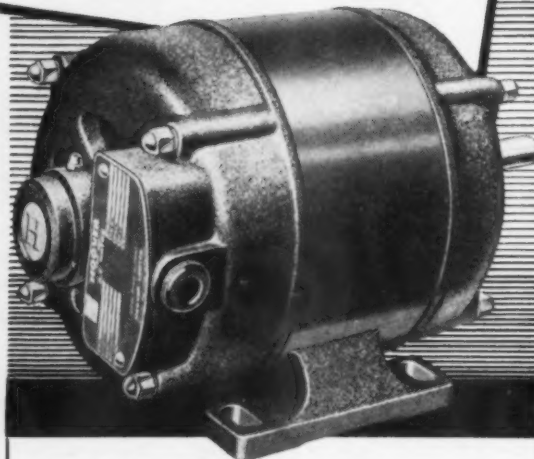
The fine workmanship that goes into Hoover Motors is responsible for their dependable, long-life performance.

You know—and your customers know—the Hoover reputation for quality. It has been built into 8,000,000 Hoover Cleaners.

Now THAT quality is being built into Hoover Motors. People are using them for home workshops, farms, factories; in fact, wherever a fractional horsepower motor is required.

Backed by an expert service—second to none—you can rely on Hoover. If you have a motor problem, contact your nearest Hoover Distributor.

HOOVER MOTORS



SPECIFICATIONS

Standard Ratings:

1/8, 1/4, 1/3 and 1/2 H.P.

Single Phase (Split Phase or Capacitor Start)
and 1/6 to 3/4 H.P. Three Phase.

Now available from Hoover Distributors in All States . . .

or full details on application to

H.14.27

Hoover (Australia) Pty. Limited, 60 Clarence Street, Sydney, N.S.W.

TENDERS FOR PATENTS

**"REFRIGERATOR CABINET";
"REFRIGERATOR"; "DOOR
FOR PLASTIC CABINET";**

Commonwealth Patents Nos. 116,794, 116,795, and 123,966. The Patentees of these inventions desire that they be adopted and brought into commercial use and manufacture in Australia, and invite inquiries to these ends from persons and firms interested. Address inquiries to **SPRUSON & FERGUSON, Patent Attorneys, 16-18 O'Connell Street, Sydney, N.S.W.**

"IMPROVEMENTS IN AND RELATING TO FLEXIBLE HOSE COUPLINGS — IMPROVEMENTS IN AND RELATING TO PIPE COUPLINGS."

Commonwealth Patents Nos. 115,297, 118,489, 115,529, 115,673, 117,608, 118,084, 118,140, 118,146 and 121,562. The Patentees of these inventions desire that they be adopted and brought into commercial use and manufacture in Australia, and invite inquiries to these ends from persons and firms interested. Address inquiries to

SPRUSON & FERGUSON, Patent Attorneys, of 16-18 O'Connell Street, Sydney, N.S.W.

"ELECTRICAL APPARATUS AND METHODS FOR STRUCTURE STUDIES AND THE LOCATION OF OIL, NATURAL GAS AND OTHER MINERALS."

NOTICE is hereby given that the owner of Australian Patent No. 108,418, dated the 8th day of September, 1938, is desirous of disposing of its rights in this invention by way of licence or otherwise.

Further particulars will be supplied on application to **DAVIES & COLLISON, Fellows of the Institute of Patent Attorneys of Australia, Temple Court, 422 Collins Street, Melbourne, C.I.**

"MECHANICAL HAMMERS"

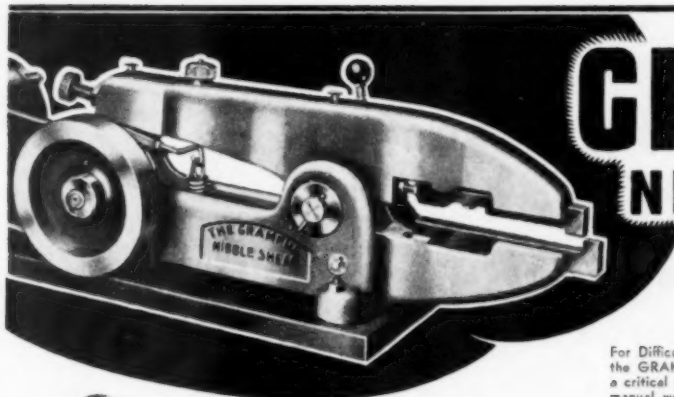
NOTICE is hereby given that the owner of Australian Letters Patent No. 121,809, dated the 27th August, 1943, is desirous of disposing of its rights in this invention by way of licence or otherwise.

Further particulars will be supplied on application to **DAVIES & COLLISON, Fellows of the Institute of Patent Attorneys of Australia, Temple Court, 422 Collins Street, Melbourne, C.I.**

"INTERNAL-COMBUSTION ENGINES OF THE FUEL-INJECTION COMPRESSION-IGNITION TYPE."

NOTICE is hereby given that the owner of Australian Patent No. 110,560, dated 14th July, 1938, is desirous of disposing of the rights in this invention by way of licence or otherwise.

Further particulars will be supplied on application to **DAVIES & COLLISON, Fellows of the Institute of Patent Attorneys of Australia, Temple Court, 422 Collins Street, Melbourne, C.I.**



GRAMPUS NIBBLE SHEAR

FOR INTRICATE SHEET METAL PROBLEMS

A versatile machine for trimming difficult pressings, channel sections, panels, tubes and contours in alloy sheet, as easily mild steel duralumin, brass, fibre, hide, etc. Silent in operation; leaving a clear-cut edge capable of following the most difficult outline accurately without distorting the work.

For Difficult Trimming at a fast rate of production, experienced users rely on the GRAMPUS NIBBLE SHEAR. This unique tool stands up to bad usage at a critical production stage, offering a mechanical application where previously manual work was the only solution! Tucks, beads, grooves and works small radii with clear relief.



GRAMPUS RIVETER

An electrically-operated cam-activated riveting machine capable of closing at 1/4 in. full head steel rivet. The Grampus riveter is robustly built for heavy duty and capable of perfect rivet formation. Self-contained and simple to operate, capable of close corner riveting. Full particulars on application!

INSPECTION & DEMONSTRATION:

The GRAMPUS NIBBLE SHEAR is on display for inspection and demonstrated without obligation at any of the interstate showrooms of . . .

McPHERSONS LTD.

(Machinery Showrooms)

Melbourne - - - Sydney
Adelaide - - - - Perth

Australian Agents:

PARBURY HENTY & CO. PTY. LTD.

MELBOURNE: Henty House, 499 Little Collins Street. MU 7131.
SYDNEY: 379-381 Kent Street. MA 1504.

BRISBANE: Macmur House, 106 Edward Street. B 2848.
ADELAIDE: 20 Franklin Street. Cent. 8581.

PERTH: E. Williams & Co. Pty. Ltd., 49 William Street. BA 2157.

STEEL

STRUCTURAL

SHEETS AND PLATES

ROLLED STEEL SECTION

ROUNDS, FLATS, ANGLES AND CHANNELS

REINFORCING RODS

ENAMELLING IRON

BARBED WIRE, BLACK AND GALVANISED

GALVANISED IRON, PLAIN AND CORRUGATED

FENCING WIRE AND WIRE NETTING

ALSO TINPLATE, ZINC SHEETS, AND INDUSTRIAL CHEMICALS

- Competitive Prices
- Regular Shipments
- Indent Only

CARRICK WEDDERSPOON COMPANY

76 Clarence Street, Sydney, N.S.W.

Telegrams: "HYDROSPHOON"

Telephone: BX 2621

COATED ABRASIVES

Oakey

EMERY • WELLINGTONITE
(ALUMINOUS OXIDE)

AND
CARBORUNDUM CLOTH

In Sheets, Rolls, Belts, Discs & Shapes

FOR ALL
METAL & ENGINEERING
TRADES



Representatives :
H. S. INGAMELLS & CO.
408-410 Collins Street
MELBOURNE
and
25 Clarence Street
SYDNEY

ACCEPTED TENDERS

COMMONWEALTH

POSTMASTER-GENERAL'S DEPARTMENT

Canvas Flax (Req. No. 3015). Davies Coop (Flax Industries) Pty. Ltd., £987/14/8.
Canvas Hose (Req. No. 3016). Thos. Evans Pty. Ltd., £1,596/5/-.
Dyeing of Burl, Dyeing of Cloth, Drab (Req. No. 3017). Gibbs, Burge & Co., £729/3/4.
Sheets (Req. No. 3018). The Lebel Trading Co. (Aust.) Ltd., £2,062/10/-.
Sheets (Req. No. 3019). The Lebel Trading Co. (Aust.) Ltd., £4,125/- (Req. No. 3020). The Lebel Trading Co. (Aust.) Ltd., £412/10/-.
Cylindrical Canvas Shower Buckets (Req. No. 3021). Norman A. Beshara & Co., £541/9/2.
Seat Cushions (Req. No. 3023). Latex Products Pty. Ltd., £740/19/-.
Hanging or Pad Locks (Req. No. 3090). Ogdon Industries Pty. Ltd., £496/10/-.
Machine, 14 gauge, 2 needle (Req. No. 3108). General Industries Corp. Pty. Ltd., £511/0/8.
Aircscrews (Req. No. 3124). Guinea Air Traders Ltd., £300.

Cams, Gauge (Req. No. 3126). William Adams & Co. Ltd., £337/5/-.
Crystal Goniometer (Req. No. 3127). Electronic Industries Imports Ltd., £247/2/6.
Galvanised Mop Buckets (Req. No. 2769). John Danks & Son Pty. Ltd., £691/11/1.
Motor Generating Set (Req. No. 2867). Bingle Machinery Pty. Ltd., £280.
Caterpillar Spare Parts (Req. No. 2868). Neerex Industrial Engineering Exports Pty. Ltd., £2,895/17/11.
Caterpillar Spare Parts (Req. No. 2869). William Adams & Co. Ltd., £1,893/13/1.
Conveyor Belting (Req. No. 2873). Dunlop Rubber (Aust.) Ltd., £372/3/10.
Line Insulator (Req. No. 2879). Nilcom Products Pty. Ltd., £1,430/2/-.
Electric Potato Peeling Machines (Req. No. 2881). James Balfour & Co. Pty. Ltd., £431.
Frequency Shift Converters (Req. No. 2883). Electronic Industries Ltd., £2,432.
Petrol Strainer (Req. No. 2884). Greer & Ashburner Pty. Ltd., £551/5/-.

Metal Cutting Bandsaw (Req. No. 2885). Gregory Steel Products Pty. Ltd., £487/10/-.
Trichlorethylene (Req. No. 2937). Imperial Chemical Industries of Aust. & N.Z., £700/6/3.
Comb and Sidecutting Pliers (Req. No. 2956). Motor Parts & Service Ltd., £595/15/4.
Wood Packing Cases (Req. No. 2961). Lensk Hayes Pty. Ltd., £4,313/10/2.
Waxed Paper (Req. No. 578). McFarlane & Burns Pty. Ltd., £450/9/-.
Aluminium Diecast Metal (Req. No. 579). Aust. Aluminium Co. Pty. Ltd., £3,033/6/8.
Zinc Plating of Bolts and Nuts (Req. No. 581). Premier Plating Co., £299/13/11.
Toilet Paper (Req. No. 584). Paper Products Pty. Ltd., £234/9/11.
Electric Boilers (Req. No. 585). J. Curtin & Sons, £744.
Diecasting Alloy (Req. No. 588). Electrolitic Co. of Aust., £3,058/15/-.
Drop Forge Presses (Req. No. 589). Welded Products Ltd., £10,980.
Abrasives (Req. No. 59). Perrot & Adams Pty. Ltd., £330/8/4.

Paint (Req. No. 591). William Felton & Co. Pty. Ltd., £431/12/9.
Corrosion Preventative, etc. (Req. No. 591). Vacuum Oil Co. Pty. Ltd., £527/19/10.
Valves (Req. No. 592). Standard Telephones & Cables Pty. Ltd., £689/3/3.
Cellulose Tape (Req. No. 593). S. Hoffnung & Co. Pty. Ltd., £353/8/11.
"Long Rifle" Cartridges (Req. No. 607). Imperial Chemical Industries of Aust. & N.Z., £391/4/4.
Cellulose Tape (Req. No. 611). S. Hoffnung & Co. Pty. Ltd., £298/8/5.
Basinets (Req. No. 612). B. Hancox & Co. Pty. Ltd., £336.
Steel Shafting (Req. No. 614). George H. Martin Pty. Ltd., £304/1/3.
Units, Dental, Electric (A/R. 716). Electro Dental Mfgs., £1,052/5/-.
Units, Dental, Electric (A/R. 720). Electro Dental Mfgs., £515/10/-.
Spare Parts, for Clark Material Handling Equipment (A/R. 722). Tutt, Bryant Pty. Ltd., £213/1/9.
D.D.T. Powder, Pure (A/R. 723). British Paints (Aust.) Pty. Ltd., £297/5/4.

50 or 50,000 ALUMINIUM CASTINGS

Whichever your need — first get a quotation from

CLINGAN BROS.

99 CANTERBURY ROAD, BANKSTOWN, N.S.W. UY 1123

Specialists in the making of permanent moulds, and the gravity die-casting of aluminium and all its alloys.

Dried Brown Rice (A/R. 725). Aust. Rice Pty. Ltd., £157/5/8.

Polished Rice (A/R. 725). Parsons Bros. & Co. Pty. Ltd., £1,288/15/-.

Cargo Clusters (Req. 732). Esantee Switchgear Pty. Ltd., £267/5/5.

Chairs, Canvas, Folding (A/R. 734). E. & E. Rostron, £1,550.

Chairs, Cane, Easy (A/R. 734). C. R. Maquire, £227/10/-.

"Cinevox" 16mm. Sound Film Projectors, Complete (A/R. 736). Precision Engineering Co. Pty. Ltd., £372/1/2.

"Tereamit" V630 Chassis Units, Complete (Req. 739). Westcott, Hazell & Co. Ltd., £421/17/8.

Paint (A/R. 741). Major Bros., £1,272 3/2; British Paints, £942.

Boilers, for Soyer Stoves (A/R. 742). F. G. Kerr & Co. Ltd., £1,770/15/-.

Cylinders and Tooling, N.A. Mark 1 (A/R. 745). B.E.R.D. Manufacturing Pty. Ltd., £960/4/-.

Non-Skid, Deck Paint (A/R. 746). Lewis Berger & Sons Pty. Ltd., £1,023/15/-.

"E.C.C." Mercury Arc Rectifier, Bulb (A/R. 751). Lambert Rectifiers Pty. Ltd., £262/10/-.

Elevating Truck (A/R. 737). Norton Toolfill & Co. Pty. Ltd., £432.

Baking Dishes (A/R. 684). F. G. Kerr & Co. Ltd., £292/10/-.

Colony Degreasing Agent, WX (A/R. 689). Abel Lemon & Co. Ltd., £261/6/8.

High Pressure Joining, "Super-ite" (A/R. 693). J. Blackwood & Sons Pty. Ltd., £640/9/1.

Packing Joint, 1 in. Laminated Cork; Hair Felt, 3 in. thick, 72 in. wide (A/R. 693). Felt & Textiles of Aust. Ltd., £267/6/3.

Portable Heaters (A/R. 696). W. Kopsen & Co. Pty. Ltd., £256/10/-.

Galy. Flexible Steel Wire Rope (A/R. 698). The Aust. Wire Rope Works Pty. Ltd., £462/11/-.

Drinker Respirator, Complete (A/R. 699). Scott, Henderson Pty. Ltd., £808.

Clear Mica (A/R. 701). Commonwealth Mica Pool, £468/1/-.

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

Special Tooling and Lids, White Metal (A/R. 704). Davison Engineering Co. Pty. Ltd., £2,497/15/4.

Compound Corrosion Preventative (A/R. 711). Shell Co. of Aust. Ltd., £245/15/4.

Carbon Tetrachloride (A/R. 711). Imperial Chemical Indus. of Aust. & New Zealand Pty. Ltd., £259/16/6.

Lifting Bars (A/R. 712). Davison Engineering Co. Pty. Ltd., £407.

Amber Perspex (File No. C. 4/150/44). Imperial Chemical Industries of Australia & New Zealand Ltd., £670/7/6.

Wax Dip Sealing (File No. C. 4/151/8). Atlantic Union Oil Co. Ltd., £99/4/6.

Cement, Australian (File No. C. 4/158/28). Australian Cement Ltd., £66/18/-.

Handles, Hammer (File No. C. 4/171/37). William Edwards & Co., £276/11/9.

Handles, for Auger No. 2, 15 in. (Blue Mountain), (File No. C. 4/171/37). Briscoe & Co. Ltd., £86/8/10.

Electric Soldering Irons (File No. C. 4/171/37). Noyes Bros. Ltd., £31/13/4; McPhersons Ltd., £162/0/10.

Handles, Chisels (File No. C. 4/171/37). Thos. Warburton Pty. Ltd., £120/0/6.

Electric Soldering Irons (File No. C. 4/171/37). Motor Parts & Service, £89/17/3.

Pliers, Insulated (File No. C. 4/171/55). James Walker, £81/16/11.

Pliers, Insulated (File No. C. 4/171/55). McPhersons Ltd., £177/5/10.

Punches, Cutter (File No. C. 4/171/55). Bennie Teare Pty. Ltd., £143/1/8.

Fullers, Nail (File No. C. 4/171/55). Johnston & Gaston Pty. Ltd., £119/10/10.

Plates, Stencil (File No. C. 4/171/55). Harris, Scarfe Ltd., £69/12/10.

Pliers, Comb (File No. C. 4/171/55). Motor Parts & Service Ltd., £595/15/4.

Oilstones (File No. C. 4/171/56). Briscoe & Co. Ltd., £80.

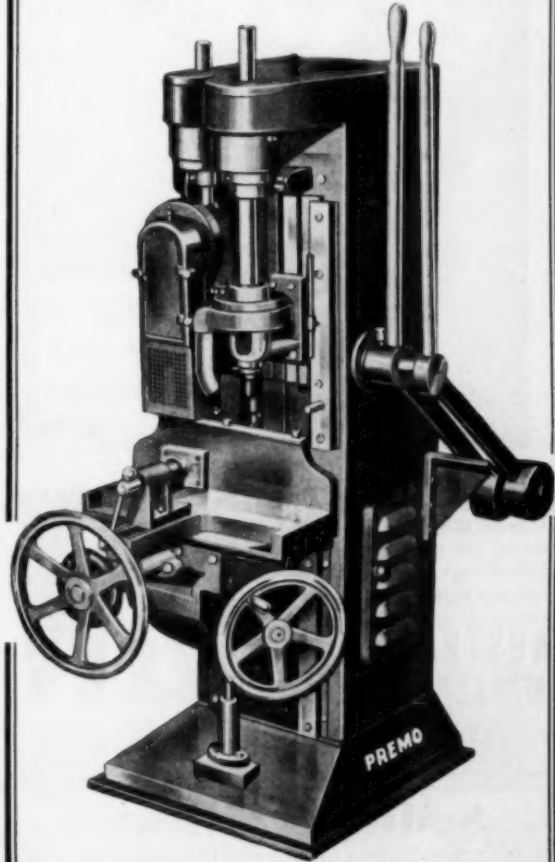
Arkansas Silps, Oilstones (File No. C. 4/171/56). Eliza Tinsley Pty. Ltd., £235/3/4.

Jack Planes (File No. C. 4/171/56). Pope Products Ltd., £572/12/6.

"PREMO"

**Ball-Bearing Combination Hollow Chisel
and Chain Mortising Machine**

The Premo Mortiser incorporates the latest clutch control and is designed to take standard mortise chains and chisels.



DELIVERY FROM STOCK

Send for leaflet giving full details

GOODALL & CO. PTY. LTD.

301 KENT STREET, SYDNEY, N.S.W.

'Phone: BX 1611

The Machinery
People
Richardson's

281 Latrobe St., Melbourne. MU 2321.

- Engineers' Machine Tools
- Woodworking Machines
- Portable Electric Tools
- Circular and Band Saws

ALL TYPES SAW REPAIRS



E.W. Malleable Fittings are pressure-tested at 300lbs. per square inch, before leaving the factory. We KNOW that E.W. Fittings in gas, steam, water, air and oil installations will do their job well.

**AUSTRALIAN MADE
MALLEABLE FITTINGS**

EW

E. W. FITTINGS LTD., 103 YORK ST.,

Sodium Silicates

Daily in hundreds of plants in the process industries CURLEWIS SILICATES are leading to savings. The way in which SILICATES can be used are numerous; and the success in each instance depends on getting the right grade of SILICATE, as well as knowing how to use it.

We have specialised in the uses of SILICATES for over 25 years. When you have a SILICATE problem, tap this reservoir of information.

MANUFACTURED BY

**C. P. CURLEWIS & CO.
PTY. LTD.**

MITCHELL ROAD, ALEXANDRIA, N.S.W.

Interstate Representatives:

RAMSAY & TREGANOWAN, LTD., MELBOURNE.
CAMPBELL BROS. PTY. LTD., BRISBANE.
SWIFT & CO. PTY. LTD., ADELAIDE, PERTH AND NEW ZEALAND.

Wood, for Oilstones, Boxes (File No. C.4/171/56). McPhersons Ltd., £102.

Hinders, 18 Ring (File No. C.4/176/74). D. Aldridge & Co., £150.

Transit Slips, Single (File No. C.4/176/74). Asher & Co. Pty. Ltd., £145/16/-.

Cases, Wood, Packing (File No. C.4/177/40). Leask, Hayes Pty. Ltd., £4,313/19/2.

Cases (Instrument), (File No. C.4/208/10). A.F.C.O. Cases Pty. Ltd., £612/10/-.

Battle Dress, Trousers (File No. C.4/252/4). Bishop & Woodward Pty. Ltd., £12,866/13/4.

Battle Dress, Blouses (File No. C.4/252/5). Esquire Pty. Ltd., £31,187/5/-.

Blue Twill Jackets (File No. C.4/252/16). Berkeley Apparel Pty. Ltd., £23,801/8/2; H. R. Hayman Pty. Ltd., £37,158/1/1; Windsor Apparel, £18,579/0/6.

Blue Twill Jackets (File No. C.4/252/16). Quintner & Sons, £16,568/3/7.

Blue Twill Trousers (File No. C.4/252/17). Rockingham Clothes Ltd., £4,929/7/9; H. R. Hayman Pty. Ltd., £38,136/18/2.

Men's White Handkerchiefs (File No. C.4/253/18). Pioneer Distributors Pty. Ltd., £1,215/13/8.

Swimming Trunks (File No. C.4/255/18). Botany Mills Ltd., £312.

Dyeing and Buri Dyeing of Cloth, Drab, Mixture (File No. C.4/250/69). Gibbs, Burge & Co., £729/3/4.

Towels, Bath (File No. C.4/258/70). W. E. Bird Ltd., £118/15/-.

Cotton Waste (File No. C.4/261/3). C. & S. Industrial Textiles Pty. Ltd., £180/15/6.

Men's Dressing Gowns (File No. C.4/266/207). Wide Ocean Trading Co. Pty. Ltd., £280.

Women's Dressing Gowns (File No. C.4/266/207). Burns, Philp & Co. Ltd., £174/10/6.

Metal Cutting Bandsaw Blades (File No. C.4/313/184). Gregory Steel Products Pty. Ltd., £487/10/-.

Soda Acid Fire Extinguishers (File No. C.4/165/23). Wormald Bros. (South) Ltd., £2,500.

Garden Hoes, 8 1/2 in. Steel Blade, with Handle Swan Neck (File No. C.4/171/25). Trojan Ltd., £60/16/8.

Cartons, Cardboard, Spare Parts (File No. C.4/179/77). Weaver Box Co., £393/18/1.

Thread Chasers (File No. C.4/313/186). Alfred Herbert (A/asia.) Pty. Ltd., £383/12/6.

A.J.W. Single Phase Switch-board Type Power Factor Meter, 250 Volt. (File No. C.4/319/14). British General Electric Co. Pty. Ltd., £67/4/-.

Overhaul of 3-Gang Mower (File No. C.4/362/23). Scott, Bonnar Pty. Ltd., £121/10/-.

Brushes, Steel Wire (File No. C.4/157/17). F. McDonald, £61/7/8.

Medical Supplies (File No. C.4/174/39). H. J. Falk, £2,711/12/8; Tromax Pty. Ltd., £3,440.

Crates, Wooden (File No. C.4/177/46). Strand Manufacturing & Agency Co., £185/10/8.

Rooms, Paper, Latrine (File No. C.4/179/81). Andrew, Jack Dyson & Co. Pty. Ltd., £2,092/3/9.

(Turn to page 67.)



EXPORTERS — IMPORTERS
GUTWIRTH & SONS
PTY. LTD.
296 Collins Street
MELBOURNE, VICTORIA
Telephone: Cent. 4618

**CHEMICAL
TANKS, DRUMS,
CONTAINERS**
coated against Acids
and Alkalies

Articles of all Shapes and
sizes PLASTIC COATED

J. & F. BROCK
STOVE ENAMELLERS
5 Inkerman Street, St. Kilda
Vic. Tel.: LA 1437.

CANS
Printed or Plain.

FANCY METAL BOXES
KEGS AND DRUMS

RICHARD HUGHES
PTY. LTD.

A MODERN FACTORY AT
YOUR SERVICE

Phone UJ2121 (6 lines)
59-75 Queens Rd., Fivedock
N.S.W.

Hitch-hike your way to success —

TAKE A LIFT with a BORTHWICK HOIST



In every phase of industry the problem of efficient goods handling is acute, and, in a great variety of applications, the electric hoist, in our wide range of standard and individual designs, is proving its immense value in meeting many aspects of mechanical handling.

Our proudest claim for these hoists is the growing list of repeat orders from satisfied users.

T. A. BORTHWICK Pty. Ltd.

576 PRINCES HIGHWAY, St. PETERS, N.S.W.

P.O. BOX 10, ST. PETERS.

Tels.: LA 3295-6.

Representatives:

Qld.: J. Wildridge & Sinclair (Bris.) Pty. Ltd., Elizabeth Street, Brisbane.

" Underhill, Day & Co. Pty. Ltd., Adelaide Street, Brisbane.

S.A.: Plant Equipment Co. Ltd., 18 Hanson Street, Adelaide.

*To Your
Cafeteria Manager*

We specialise in the supply of complete original equipment or replacement of all Cafeteria Utensils and Factory Cleaning Requirements, including —

CAFETERIA UTENSILS

TABLE CUTLERY
KITCHEN CUTLERY
EARTHENWARE JUGS
CUPS AND SAUCERS
PLATES
COUPES

SWEETS DISHES
ALUMINIUM BOILERS
ALUMINIUM SAUCEPANS
CAFETERIA TRAYS
BAKING DISHES
GLASSWARE

FACTORY CLEANING SUPPLIES

GARBAGE BINS • BUCKETS • BRUSHWARE
MOPS • DISINFECTANTS

TELEPHONE FOR PROMPT ATTENTION

WILBRO HARDWARE CO.

141 ARNCLIFFE STREET, ARNCLIFFE, N.S.W.
Telephone: LX 1071

Greg-Steel

CIRCULAR SAWS & KNIVES



*For Smooth . . . Fast
UNIFORM CUTTING!*

Designed by specialists and built to precision measurements, Greg-Steel Saws and Knives are available in a complete range to all trades.

Durable and dependable. Made from specially selected, scientifically heat treated material. Easily sharpened. Unconditionally guaranteed to be of first-class manufacture!

Manufactured by

GREGORY STEEL PRODUCTS PTY. LTD.

Sawmakers and Industrial Knife Specialists
25 JOHNSTON STREET, COLLINGWOOD, VIC.

CANISTERS and DIES

Development and Production of New Lines



SOME OF MANY LINES MANUFACTURED:

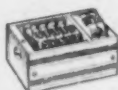
- CANISTER MAKERS
- ADJUSTABLE GLASS SHELF BRACKETS
- DIE MAKERS

Our plant is especially equipped for Press Work, Screwing, Tapping, Bending, Forming, etc. Enquiries are invited regarding the production of your new lines, large or small.

NORTON MANUFACTURING CO. PTY. LTD.

137 REGATTA ROAD, FIVEDOCK, N.S.W.
'Phone: UJ 2638

NUMBERING MACHINES



Automatic and
Lever Operated Models

Automatic Numbering Heads
for Stamping on Metal



Repairs and Spare Parts for all makes
of NUMBERING MACHINES, BOOT
AND CLOTHING MARKING
MACHINES, COUNTERS, BANK
STAMPS, METAL STAMP INKS, all
colours.



JOHN M. HARDIE & CO.

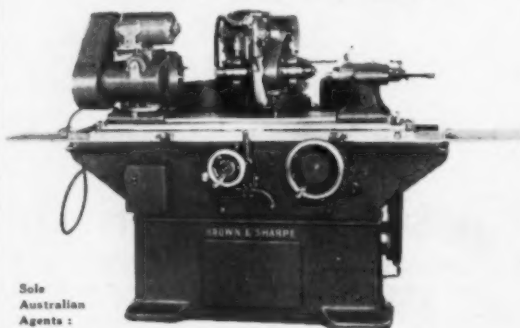
Manufacturing Engineers and Repairers

434 Little Bourke Street, Melbourne, C.I.

Telephone: MU 5327

BROWN & SHARPE MACHINE TOOLS

UNIVERSAL and PLAIN GRINDING MACHINES. •
AUTOMATIC SCREW MACHINES. • UNIVERSAL and
PLAIN MILLING MACHINES. • TOOL and CUTTER
GRINDERS. • SURFACE GRINDERS.



Sole
Australian
Agents:

Scruttons Pty. Ltd.

161 CLARENCE STREET, SYDNEY. Tel.: BX 9131 (7 lines).

FOUNDRYMEN

WE CAN HELP YOU !

STANCOL PREPARED CORE AND MOULD WASHES
COME READY FOR INSTANT USE.

ONE GRAPHITE BASE AND ONE REFRACTORY BASE
FOR DIPPING OR SPRAYING.

THEY WON'T SETTLE OUT

STANCOL CORE GRIP—The perfect core sticker. Use it and
forget it. The core breaks first.

Docker's A-Z Iron Cement.

Stancol Mudding Compound. Stancol Stripping Aid.

Stancol Torch Spray.

Stancol Non-ferrous Core Coat.

Volclay-Bentonite.

Enquiries to

STANDARD CHEMICAL CO.

80 KING STREET, MELBOURNE. 'Phone: MU 5478, MB 2962.
15 ROWE STREET, SYDNEY. 'Phone: BW 8216.

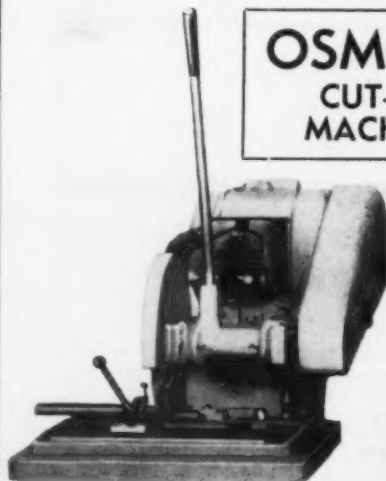
E. TRELIVING & SON LTD.

LIGHT SQUARE, ADELAIDE. 'Phone: Cen. 4975.

Underhill, Day & Co. Pty. Ltd.
T. & G. Buildings
Queen Street, BRISBANE, Q'LAND
'Phone: B 9373

Western Machinery Co. Pty. Ltd.
494 Murray Street
PERTH, W.A.
'Phone: BA 2488

OSMOND CUT-OFF MACHINES



HIGH SPEED
ABRASIVE WHEEL
AND
METAL-SAWING
MACHINES

Wet or Dry
Cutting Types

Invaluable for
quickly cutting Hard
or Soft Steels to 2in.
diameter, Brass, Alu-
minium, Plastics,
Ceramics in Bars,
Angles, Tubes and
irregular sections.

EARLY DELIVERIES

Sole Australian Distributors:

HAWKER RICHARDSON & CO.

209-215 WILLIAM STREET, MELBOURNE. Central 6573.

(Continued from page 64.)

Jackets, Twill, Blue (File No. C.4/252/18). Rockingham Clothes Ltd., £9,323/15/10.

Gravity Feed Bread and Bacon Slicing Machine (File No. C.4/307/212). Brice Scale & Slicer Co., £85.

Readers, 10 ft. Steel Tape (File No. C.4/376/32). N. H. Seward Pty. Ltd., £105/9/9.

Brushes, Marking, Paint (File No. C.4/157/17). John Zevenboom & Co. Pty. Ltd., £235/6/-.

Brushes, Distemper (File No. C.4/157/17). S.A. Brush Co. Ltd., £1,749/11/3.

Brushes, Lacquer (File No. C.4/157/17). Harris, Scarfe Ltd., £152/1/-.

Cans Tea, 3 gallon, with lid and spout (File No. C.4/175/148). A. Joyce & Co. Pty. Ltd., £317/3/9.

Crates, Wooden (File No. C.4/177/4). Strand Manufacturing & Agency Co., £227/0/9.

Paint, Non Skid, Dark Grey (File No. C.4/178/59). Lewis Berger & Sons (Aust.) Pty. Ltd., £1,828/2/6.

Blouses, Battledress (File No. C.4/252/5). Rockingham Clothes Ltd., £11,567/10/-.

Coventry Climax Diesel Operated Fork Lift Trucks (File No. C.4/311/11). Queen's Bridge Motor & Engineering Co. Pty. Ltd., £5,161/13/-.

Spanners (File No. C.4/171/58). McPhersons Ltd., £66/3/7.

Knives, Table, Large (File No. C.4/175/98). Briscoe & Co. Ltd., £2,623/12/2.

Cleansing Paste (File No. C.4/180/53). Oxford Polish Co. Pty. Ltd., £120/18/-.

Pillows (File No. C.4/266/191). Howard & Dodd, £468.

Mattresses, Fibre (File No. C.4/266/191). Rolfe & Son, £3,846/6/2.

Sheets, Waterproof, for Cots (File No. C.4/267/28). Bramac Ltd., £463/2/6.

Sheets, Cot (File No. C.4/267/30). Lebel Trading Co. (Aust.) Ltd., £900.

P.V.E. Slip Gauges (File No. C.4/313/158). McPhersons Ltd., £391.

Sliding, Surfacing and Screw Cutting, Motor Driven Engine Lathe (File No. C.4/313/187). Gilbert Lodge & Co. Ltd., £2,378/10/-.

Cathode Ray Oscilloscope, with Visual Green Screen (File No. C.4/319/18). Electronic Industries Imports Pty. Ltd., £268/10/-.

Cylinders (File No. C.4/360/51). Wharrington Bros., £3,812/10/-.

Non-Ferrous Castings (File No. C.4/371/226). Norman A. Matthews & Son, £193/4/-.

Brass, Bar (File No. C.4/371/234). Extruded Metals Pty. Ltd., £191/7/3.

Bronze, Phosphor, Round (File No. C.4/371/251). Norman A. Matthews & Son, £204/15/-.

Machines, Print, Drying and Glazing (File No. C.4/373/73). V. Henderson, £2,490/9/6.

DEPARTMENT OF WORKS AND HOUSING.

Refrigeration Drinking Units (18). Darwin. Parsons & Robertson Ltd., £2,617/5/-.

Hydraulic Truck Hoists (2). Darwin. Cornell Ltd., £540.

Fabrication of M. X. Dredge Pipes from steel supplied, Airport, Mascot. G. & F. Steel Products Pty. Ltd., £4,195/12/-.

Pumps and Motors, part two, for Carnarvon Whaling Station. McPhersons Ltd., £353/7/6.

NEW SOUTH WALES

METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

M.S. Fittings, for Pumping Units, £542. T. & R. Pearson.

SYDNEY COUNTY COUNCIL.
Self Cleaning Circulating Water Screen, £4,526. Davidson Engineering Co. Pty. Ltd.

Low Voltage Switch and Fuse Panels, £19,661. F.T.S. O'Donnell, Griffin & Co. Pty. Ltd.

Remote Controlled Isolating Valves, for Fuel Oil Lines, £2,433. J. H. Liddle & Epstein.

Oil Immersed Current Limiting Reactors, 3 phase, nine, £37,564. C. A. Parsons & Co. Ltd.

Front End Loaders, Petrol Engine Driven, two, with two Bulldozer Plates, £3,860. Whyte Hall British Products Pty. Ltd.

SYDNEY COUNTY COUNCIL.
ELECTRICITY UNDERTAKING.

Ash and Dust Handling Plant, Bunnerong "B", £202,599. Simon Carves Ltd.

Oil Circuit Breaker Switching Equipment, 11,000 V., three, £7,194. Westinghouse Rosebery Pty. Ltd.

Switchgear, 132,000 V., Substation, £170,191. A.G.E. Pty. Ltd.

PUBLIC WORKS DEPARTMENT.

Lifts, Bed Passenger, Elec. Operated, three, District Hospital, Bankstown, £25,238. Otis Elevator Co. Pty. Ltd.

Lifts, Bed Passenger, Elec. Operated, two, District Hospital, Cowra, £14,818. Otis Elevator Co. Pty. Ltd.

Chimney, Self Supporting, Steel, Newcastle Western Suburbs Maternity Hospital, £603. T. C. Pollard.

Steam Condensate and H.W. Service, Newcastle Western Suburbs Maternity Hospital, £3,992. J. C. W. Bridge & Co. (Newcastle) Pty. Ltd.

Manganese Steel Pins and Bushes, for Dredge Service, £6,837. Horrocks Roxburgh Pty. Ltd.

Steam Raising Plant, Western Suburbs Maternity Hospital, Newcastle, £13,721. John Thompson (A'asia) Pty. Ltd.

DEPARTMENT OF MAIN ROADS.
Pluviometers. Andrew Thom Ltd., £221/17/6.

Drill Descaling Machine. Wm. Adams & Co. Ltd., £146/16/7.

Electric Drying Oven, Martin Furnace & Engineering Pty. Ltd., £170.

Steel Plan Cabinets. Steelbilt Ltd., £72/14/-.

Pallissades. A. Abrahams & Sons, £60.

ACTUAL SIZE

Austral
CHAIN CO.

Manufacturers of Chain in all Metals

- PLATINUM
- WHITE GOLD
- YELLOW GOLD
- SILVER
- ROLLED GOLD
- GILDING METAL CHAIN

in GILT, NICKEL, or SILVER finish.
WIRE DRAWING TO ANY SIZE.

MELBOURNE ADDRESS:
88 KAY STREET, CARLTON
VICTORIA

Manager:
Miss M. E. WITTENBERG
Phone: FJ 8412

STG. SILVER & 9 CARAT CHAIN AVAILABLE FOR IMMEDIATE DELIVERY

MANUFACTURERS OF

Sheet Metal Working Machinery

GUILLOTINES—2, 4, 6, 8 and 10ft. Models.
CRAMP FOLDERS—3, 6 and 8ft. Models.
PANBRAKE FOLDERS—2, 4 and 6ft. Models.
ROLLERS—3ft. and 6ft. Sets.

ALSO MOTORISED DRILLING MACHINES

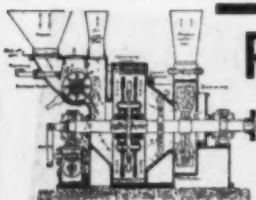
H. C. HORTON
GENERAL ENGINEER AND IRON FOUNDER
715-717 Dandenong Road, Malvern, Victoria. Phone: U 9128.

WATERPROOF PAPER

For WRAPPING, LINING CASES
and a hundred and one uses.

Made in rolls of convenient length,
24in., 30in., 36in., 45in. wide.

MAXWELL, PORTER & SON
LIMITED
197 Bedford Street, REDFERN, N.S.W. Tels: MX 1223, MX 3187.



RAYMOND WHIZZER PULVERISERS

For grinding, separating and transporting powdered materials. Deliver a product of absolutely uniform fineness. Specially designed for pulverising earths, clays, pigments, barytes, ochres, colours, kaolin lime, precipitated colours, coal, etc.

This machine, shown above, is made in two sizes and fitted with hinged hammers. It is frequently used for pulverised coal firing of small metallurgical furnaces and kilns and for grinding such materials as chalk, shale and gypsum to a fineness up to 200 mesh.

International Combustion Australia Ltd.

Head Office: 247 GEORGE ST., SYDNEY. BU 3334.
Melb. Office: 369 COLLINS ST., MELB. MU 1491.
Adelaide Agents: NEWTON, McLAREN Cn. 8349.
Brisbane Agents: UNDERHILL, DAY. B 9973.

ALL PURPOSE Spring CLIPS

by HENDERSON'S

— provide a handy place, when fitted around the home, garage or on the engineering workshop shadow-board, to hang your tools and implements to keep them neat and out of the way where they can't be mislaid, yet within easy reach as required.



* Henderson's Spring Clips — another guaranteed product of Australia's Leading Spring-makers — are made of high-quality, hardened and tempered steel. They are available to suit every purpose — singly, to a special design or on cards containing assorted sizes—from all Wholesale, Hardware Stores and Garages throughout Australia. M87-12

HENDERSON'S FEDERAL SPRING WORKS LIMITED

(Incorporated in Victoria)
MELBOURNE HEAD OFFICE & WORKS: Alfred Street, North Melbourne, VI. 21911
City Address: 83 Elizabeth Street, Melbourne, VI.
SYDNEY: 17 Bourke Street, Alexandria, N.S.W. M 344

Plan Cabinet. Forster's Products Pty. Ltd., £28/10/-.

Electric Drills, Grinder and Spray Gun. Bradley Bros. (part), £53/8/6; Demco Machinery Co. Pty. Ltd. (part), £6/8/-; H. P. Gregory & Co. Ltd. (part), £29/13/1; Westcott, Hazell & Co. Ltd. (part), 5/3.

Hand-operated Emulsion Sprayers. Shell Co. of Aust. Ltd., £95.

Batteries. Bennett & Wood Pty. Ltd., £56/9/8.

Concrete Pipes. Monier Pipe Co. Pty. Ltd., £723.

Steel Warning Signs. Crown Crystal Glass Pty. Ltd., £2446/18/9.

Upholstery Fabric. Imperial Chemical Industries of Aust. & N.Z. Ltd., £33/2/6.

Reduction Gear Box. Coote & Jorgensen Ltd., £100.

Jackhammer Parts. Whyte-Hall British Products Ltd. (part), £9/11/9; Ingersoll-Rand (Aust.) Pty. Ltd. (part), £26; Pneumatic Tool & Eng. Co. Pty. Ltd. (part), £25/14/-.

Tools. Motor Traders Pty. Ltd. (part), £3/6/-; Westcott, Hazell & Co. Pty. Ltd. (part), £15/13/2; H. P. Gregory & Co. Ltd. (part), £4/2/10; Whyte-Hall British Products Pty. Ltd. (part), £5/3/3; Demco Machinery Co. Pty. Ltd. (part), £12/12/5.

Pneumatic Grinder. Gilbert Lodge & Co. Ltd., £32/10/-.

Elevator Belt. Goodyear Tyre & Rubber Co. (Aust.) Ltd., £41/4/10.

Electric Motor and Equipment. Australian General Electric Pty. Ltd. (part), £2/9/11; Noyes Bros. (Sydney) Ltd. (part), £12/3/-.

Wire Rope Clips. W. Kopsen & Co. Pty. Ltd., £64/9/2.

Plywood. Proofwood Ltd., £160/6/3.

Bituminous Joint. Perry & Son, £72/10/-.

Bitumen Heating Kettles. Tutt, Bryant (N.S.W.) Pty. Ltd., £43/2/.

Steel Wire Rope. Elder, Smith & Co. Ltd. (part), £476/5/3; Tutt, Bryant Pty. Ltd. (part), £2318/3/8; Bullivants (Aust.) Co. Ltd. (part), £502/5/9.

Supply and Installation of Compressed Gas. Northern Blue Ray Gas Co., £195/17/11.

M.S. Channels, Flats and Plates. Stewarts & Lloyds (Aust.) Pty. Ltd., £478/2/5.

Jackhammer Parts. Pneumatic Tool & Engineering Co. Pty. Ltd. (part), £83/0/1; Whyte-Hall British Products Pty. Ltd. (part), £25/0/6.

Electric Drills and Sanding Machine. H. P. Gregory & Co. Ltd. (part), £20/18/9; Goodall & Co. Ltd. (part), £34/8/-.

Protection Angles. Permasteel Pty. Ltd., £27.

Bar Mat. A.R.C. Engineering Co. Pty. Ltd., £94/8/5.

Concrete Pipes. Humes Ltd., £55/14/8.

Gully Grates and Frames. Mascot Engineering Co., £200/17/-.

Protection Angles. Permasteel Pty. Ltd., £47/4/-.

Expansion Plates. Brent and Warburton, £30.

GASKETS

ALL SIZES

Made From Specifications

ONLY BEST QUALITY MATERIALS USED

QUOTATIONS GIVEN FREELY

C. H. ROBERTSON

186-188 PARRAMATTA RD.,
SYDNEY, N.S.W.
Phone: CAMPERDOWN,
LA 2609

HARD CHROME PLATING for Building Up

DIES, GAUGES, SHAFTS

Woodward & Thurston Pty. Ltd.

208 St. John's Road, GLEBE
SYDNEY, N.S.W.

Phone: MW 2571 (2 lines).

GENERAL ENGINEERS

AND

SHEET METAL WORKERS

B.S.F. PTY. LTD.

9-11 David Street

RICHMOND, E.I. Victoria

Tel.: JA 2084

ROLL-ON LITHO & PRINTING CO. Manufacturers of SIMPLEX TRANSFERS

140 QUEEN ST. MELB. MU 3618

Harris Hutchinson Pty. Ltd.

MANUFACTURERS OF
ABSORPTION TYPE
DOMESTIC REFRIGERATORS
AND
COMMERCIAL CABINETS

Bowden St., Alexandria, N.S.W.

Phone: MX 1481 (2 lines)

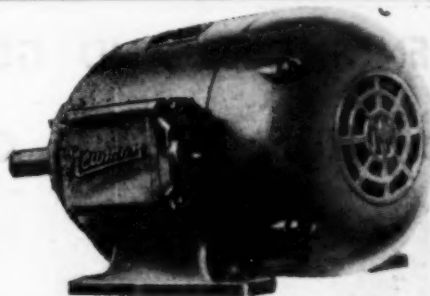
Newman

TOTALLY ENCLOSED INDUSTRIAL MOTORS

British-made for Australian Industry—the pioneers in the universal application of Totally Enclosed Motors now make available to Australian Industry motors of the highest standard, ranging from 1/6 to 25 horsepower.

The construction of Newman Motors ensures complete protection to all internal parts. They are precision-built to the highest specifications, fan-cooled, smooth and simple.

We are manufacturers of: Leather Belting, Rawhide Belting, Pump Leathers, Harness Leathers, Industrial Gloves, Cut Soles, etc.



THE MODERN MOTOR FOR MODERN INDUSTRY

NEWMAN FAN COOLED AND NATURAL COOLED FLAME PROOF MOTORS ARE BUXTON CERTIFIED

N.S.W. Distributors:

Mangrovite Belting Ltd.

49 YORK STREET

WYNWARD SQUARE

SYDNEY.

Telegrams: "Mangrovite," Sydney

Telephone: BX 1641

Battery Chargers. British General Electric Co. Pty. Ltd., £42/15/-.

Concrete Pipes. Humes Ltd., £59/8/-.

Transmission Belting. Goodyear Tyre & Rubber Co., £142/5/7.

Concrete Pipes. Rocla Ltd., £1,831/15/6.

Injection Nozzles, Valves and Bodies. Pyrox Ltd. (part), £67/4/-; Bennett & Wood Pty. Ltd. (part), £38/2/-.

Tridorsers. Tutth Bryant Pty. Ltd. (part), £4,056/3/11; Waugh & Josephson Pty. Ltd. (part), £1,845.

Batteries. Erg Batteries Pty. Ltd. (part), £57/12/8; Reliance Batteries Pty. Ltd. (part), £25/17/8.

Concrete Pipes. Humes Ltd., £139/10/-.

Plywood. Leopold Barnett Pty. Ltd., £136/9/6.

GOVERNMENT RAILWAYS DEPARTMENT.

Auxiliary Switchgear, to Spec. No. 1246, Lake Macquarie Power Station, and Carlingford Terminal Station. Westinghouse, Rosebery Pty. Ltd., £116,915.

Transformers—two 250kVA, to Spec. No. 1260, for Lawson Substation. B.G.E. Pty. Ltd., £1,167.

VICTORIA

GOVERNMENT RAILWAYS DEPARTMENT.

Petroleum Jelly (Sch. 183). Caltex Oil (Aust.) Pty. Ltd., Neptune Oil Co. Pty. Ltd. Rates.

Black Steel Bolts and Nuts (Sch. 203). McPherson's Ltd. Rates.

Bright Steel Bolts and Nuts (Sch. 204). H. A. Barnard Pty. Ltd., McPherson's Ltd. Rates.

Steel and Brass Washers (Sch. 206). Sidney Cooke Ltd. Rates.

Felt Hats (Sch. 214). Coronet Felts Pty. Ltd. Rates.

Sponge Cloths (Sch. 215). H. V. Braddock & Co., as Agents for The Chain Bar Mill Co. Ltd. Rates.

Goggles, Respirators, etc. (Sch. 232). Gilbert Lodge & Co. Pty. Ltd., Protector Goggle Co. J. Lyall. Rates.

Bicycle Accessories (Sch. 234). Dunlop Rubber (Aust.) Ltd., General Accessories Pty. Ltd., Replacement Parts Pty. Ltd. Rates.

Lightning Arresters (1,500 V., D.C.), (Con. 57,715). R. & C. Thomas Bros. Pty. Ltd. Rates.

Tractor and Rotary Hoe (Con. 7641). C. Hassett & Sons Pty. Ltd., 1916 each.

Stoves, one fire (Con. 7649). James McEwan & Co. Pty. Ltd., £10/19/- each.

Transformers, for T.2 Dwarf Signals (Con. 7654). Trimax Transformers Pty. Ltd., 77/6 each.

Steel Bars, Nut Quality (Con. 7622). Hugh Scott, Young Pty. Ltd., £46/15/3 ton (G.F. & E.).

Trach Relay Transformers (Con. 7647). Trimax Transformers Pty. Ltd., 52/6 each.

Cable Armoured Trailing Mine (Con. 7651). Gilbert Lodge & Co. Pty. Ltd., £86/1/4 100 yds. ?

PUBLIC WORKS DEPARTMENT.

Fittings, for Frankston High School. F. T. Pulling, £340.

Equipment, for Penridge. E. F. Ahearn & Co., £1,850.

Sanitary Equipment, for Sunbury Mental Hospital. R. L. Philip, £897/10/-.

Equipment, for Caulfield Technical School. H. W. Creek & Sons, £386/10/-.

"PRECISE"

2 in. 5 in.

A.C. and D.C. VOLTMETER and AMMETERS

Enquiries invited by:

R. B. Churchley Pty. Ltd.

Factory Representatives for all States

175 WILLIAM STREET, MELBOURNE
Tele: MU 1817, MU 4577.



PNEUMATIC MACHINES

Manufacturers of spare parts for every type of Pneumatic Machine, including Jackhammers, Pickers, Drifters, Riveters, etc. All types of Hose Fittings stocked.

COMPRESSORS

Manufacturers of Plate Valves and Seals for every type of Compressor.

PNEUMATIC TOOL & ENGINEERING CO. PTY. LTD.

114-116 REGENT STREET, REDFERN N.S.W.

Phone: MX 1068.

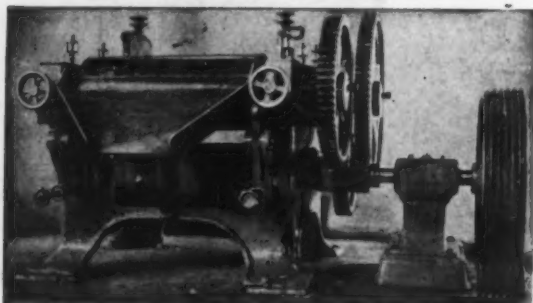
Telegraphic Address: "NAPTOL," Sydney.

YOUR PRODUCT NEEDS

DOT SNAP Fasteners
AND FITTINGS FOR ALL TRADES

CARR FASTENER CO. OF AUST. LTD.
ALBERTON L., SOUTH AUSTRALIA

ENGINEERS AND GOVERNMENT CONTRACTORS ★ MANUFACTURERS OF INDUSTRIAL MACHINERY



"STAR" 30 x 12 INK REFINER

**SPARE PARTS
FOR**

ANY MACHINES !

Machinery designed for
individual requirements..
or supplied to customers'
own designs.

MACHINING, TURNING AND
FITTING FOR THE TRADE

194-218 LAWRENCE STREET
ALEXANDRIA - N.S.W.

Telephones: LA 3348, LA 3349.

STAR MACHINERY PTY. LTD.

CURRENT TENDERS

NEW TENDERS

The following tenders have
been called since our last issue.
Current tenders which have
been published in previous
issues follow this section.

COMMONWEALTH

POSTMASTER-GENERAL'S DEPARTMENT.

Arm Braces and Combiners
(Sch. C.6330). June 29.

Carrier Telephone Equipment
(Sch. C.6343). July 13.

Communication System between
Sydney and Melbourne (Spec. C.-
8157). Extended to Jan. 18, 1951.

File Covers (Sch. C.6333). July
6.

Loading Colls in Cases (Sch. C.-
6279). July 13.

Printed Forms, Money Order,
"M.O." Series (Sch. C.6340). June
29.

Pipe Hooks and Clips (Sch. C.-
6319). July 6.

Pole Caps (Sch. C.6335). Aug.
31.

Sleeves, Paper Jointing (Sch.
C.6331). June 29.

Semi Automatic Trunk Ex-
change Equipment (Sch. C.6025).
Sept. 28.

Sleeves, Waxed Paper (Sch. C.-
6337). July 6.

Underground Cable, large sizes
(Sch. C.6334). July 6.

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

Cotton Canvas, Flax Canvas
and Cotton Duck. June 29.

Radio-sonde Transmitters. July
18.

NEW SOUTH WALES

STATE CONTRACTS CONTROL BOARD.

Emergency Electric Power
Plant. June 20.

High Frequency 4K.W. Induc-
tion Heater. June 27.

Recondition Loom. June 19.
Steel Instrument Cabinet. June
19.

GOVERNMENT RAILWAYS DEPARTMENT.

Chrome Plated Locks (Sch. CE-
2771). June 21.

Inclined Monometer (20 inch),
(Sch. CE-6295). June 19.

Indoor Type Oil Circuit
Breakers, 6,000 volt, 75 M.V.A.,
for Awaba State Coal Mine Sub-
station (Spec. 1266). Aug. 30.

Indoor Type Oil Circuit
Breakers, 415 volt, for Awaba
State Coal Mine Sub-station (Spec.
1267). Aug. 30.

(Turn to page 71.)

NICHROME RESISTANCE WIRE THE WORLD'S BEST

Made in England

SOLE AUSTRALIAN AGENTS:

WARMAN & DOUGLAS

941 FLINDERS LANE, MELBOURNE.

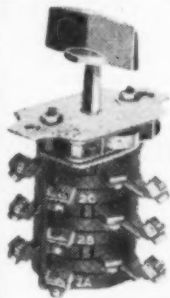
Phone: JM 1568.

Wood and Metal Pattern Maker

SPECIALIZING IN ALL CLASSES OF ENGINEERING
AND PATTERNMAKING

K. C. WHITE

21 Butler Street, Richmond, C.I., Victoria, off Victoria Street,
near North Richmond Railway Station. 'Phone: JA 2072.



SANTON ROTARY SWITCHES

- Meet all medium power hand control applications and intricate circuit combinations — multiple pole selection for 4 and 6 positions.
- Permit neat panel design with advantage of saved space, wiring time, panel costs and materials.
- Rupturing capacities to 25kVA — max. amp. 160, max. volt. 660.

FOR THE BETTER DESIGN AND CONTROL OF MULTIPLE CIRCUITS

Sole Australian Agents:

H. G. THORNTWHAITE & CO., 43 Margaret St., Sydney. BX 5008.

Interstate Agents:

QUEENSLAND:
Parbury Healy & Co. Pty. Ltd.,
100 Edward Street, Brisbane.
B 2946

VICTORIA:
A.V.H. Electrical Engineering Co.,
80 Queen Street, Melbourne, C.I.
MU 6352

WEST. AUSTR.: S. Y. Carnaworthy, 60 St. George's Terrace, Perth. B 3000.

NEW TENDERS — Contd.

Pullrod Safety Loops, for Bogies (Sch. CE-2770). June 20.
Steel Cabinet and Stand, 6-drawer (Sch. CE-6296). June 19.

METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

M.S. Semi-Trailer Transporter Units (22), for Bulk Cement. Extended to June 27.
M.S. Electrically Welded Cement Lined and Coated Fittings. July 11.

DEPARTMENT OF WORKS AND HOUSING.

Cooking Ranges, for George's Height. June 27.
Electric Water Supply Systems (2), continuous heated, for Garden Island. July 4.

FORESTRY COMMISSION.

Augers. June 20.
Gear Cutter. June 20.
Key Cutters. June 20.
Poison Dust Blower. June 20.
Power Hacksaw Blades. June 20.
Spark Plug Spanners. June 20.
Steel Level. June 20.
Tool Holder. June 20.
W. I. Hinges. June 20.
Wood Screws. June 20.

DEPARTMENT OF MAIN ROADS.

Bandsaw. June 22.
Brass Expansion Plates. June 22.

WOODWORKING MACHINERY

6in. Long Table Buzzers,
Belt Sanders, Positive Foot
Mitreing Machines, etc.

GILBRO ENGINEERING
79-83 Pleats Road, Preston, Vic.
JU 3580 Enquiries Solicited

Berriman Loader. June 27.
Car Washing Unit. June 22.
Concrete Pipes. June 22.
Drilling Machine. June 27.
Electric Drilling Machines. June 22.
Galvanised Deck Bolts. June 22.
Plywood. June 22.
Pumps. June 22.
Radial Screwing Machine. June 27.
Sanding Machine. June 27.
Wheel Rims. June 27.

♦ ♦ SEE ALSO ♦ ♦ "LATE OPEN TENDERS"

MARITIME SERVICES BOARD.

Steel Wire Mesh Reinforcement. June 19.

SYDNEY COUNTY COUNCIL.

Air Break Isolating Switches, for Support Insulators (Spec. 1386). Extended to July 6.

Brooms and Brushes. June 21.

Circulating Water Screens, self-cleaning, for Pyrmont "B" Power Station (Spec. 1426). July 27.

Coal Handling Plant, for Bunnerong "B" Power Station (Spec. 1400). Extended to June 22.

Desk Fans. June 22.

Power Transformers (45 MVA), for Homebush Sub-station (Spec. 1419). Aug. 31.

Precision Lathe, 8 inch swing, and Accessories (Spec. 1425). Sept. 7.

WATER CONSERVATION AND IRRIGATION COMMISSION.

Portable Concrete Mixer (2), engine driven, approx. 10 c.f. capacity. July 6.

(Turn to page 72.)

No 'time-wasting' peering —



When you install
ROTOTHERM
Bi-Metallic DIAL THERMOMETERS
you take a **LONG RANGE**
view of efficiency
(in a double sense)



Rototherms give you —

LONG DISTANCE READING — because their dials are clearly and boldly calibrated.

CONSISTENT ACCURACY — because the ingenious bi-metal construction has been proved scientifically correct over many years of constant use.

LONG LIFE — because their sturdy construction makes them vibration- and shock-proof.

ECONOMY — because these combined advantages, coupled with moderate prices, make Rototherms the best value money can buy.

TEMPERATURE READINGS for YOUR particular requirements — because there are Rototherm types and calibrations for **EVERY** industrial requirement.

EASY INSTALLATION. They are available in vertical or horizontal types. Dials are 2 1/2 in. or 4 in. dia., or up to 7 in. dia. to meet special requirements. Length of stems up to 48 in., or shorter if desired.

'Phone to-day and our Representative will call and advise you on your heat-measuring problems

SOLE AGENTS FOR AUSTRALIA:

Wm. J. McLELLAN & CO. PTY. LTD.

BRADBURY HOUSE, 95 YORK ST. SYDNEY • PHONE BX2508

MELBOURNE: 111 RATTLE (ENCLAVING) PTY. LTD. • ELECTRIC ELECTRIC PRODUCTS PTY. LTD.

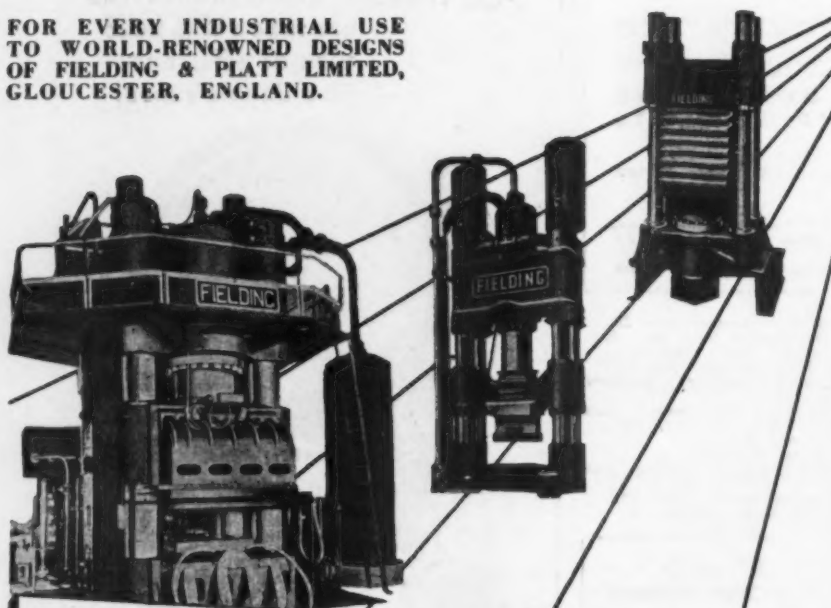
111 RATTLE (ENCLAVING) PTY. LTD. • ELECTRIC ELECTRIC PRODUCTS PTY. LTD.

111 RATTLE (ENCLAVING) PTY. LTD. • ELECTRIC ELECTRIC PRODUCTS PTY. LTD.

111 RATTLE (ENCLAVING) PTY. LTD. • ELECTRIC ELECTRIC PRODUCTS PTY. LTD.

Hydraulic Presses

FOR EVERY INDUSTRIAL USE
TO WORLD-RENOVED DESIGNS
OF FIELDING & PLATT LIMITED,
GLOUCESTER, ENGLAND.



THE RANGE OF
FIELDING HYDRAULIC
PRESSES IS MADE
IN AUSTRALIA
UNDER LICENCE
BY—

A. Goninan & Co. Limited

NEWCASTLE - N.S.W. •

MANUFACTURING • STRUCTURAL • AND GENERAL ENGINEERS

As Licensees of Fielding & Platt Ltd., of England, we are able to manufacture in Australia Fielding hydraulic presses in sizes and capacities to suit your metal working operations, forging requirements or special industrial processing needs as, for instance, plywood and veneer and roofing tile production, etc. Our Technical Department will be pleased to submit a proposal covering specification and quotation for a Fielding hydraulic press to your requirements.

MANUFACTURERS OF RUBBER AND MINING MACHINERY
ROLLING STOCK, SKIPS, BOILERS, DROP FORGINGS
IRON, BRASS AND MEEHANITE METAL CASTINGS,
SPUR, HELICAL WORM AND BEVEL GEARING •

NEW TENDERS — Contd.

Steam Slush Pump, Purchase of. June 29.

MISCELLANEOUS.

Gang Mower Combination, comprising Tractor and Gang Mowers, 7 ft. cut, Purchase of, from Municipality of Randwick. July 4.

Motor Grader, heavy duty, tandem drive, equipped with Scarifier, for Shire of Tamarang. June 22.

VICTORIA

GOVERNMENT RAILWAYS DEPARTMENT.

Switchgear, 2,200 volt. July 26.

POSTMASTER-GENERAL'S DEPARTMENT.

Agricultural Drain Pipes (Sch. V.350). July 11.

Bin Store Units (Sch. V.362). July 11.

STATE ELECTRICITY COMMISSION.

Automatic Telephone Apparatus (Spec. 50-51/13). Aug. 2.

Indoor Wall Mounting Current Transformers (Spec. 50-51/12). July 19.

CITY OF MELBOURNE.

Doxer, small. June 21.

Low Tension Junction Boxes (Spec. 723/E). July 10.

Radial Drilling Machine (Spec. 722/E). July 3.

MISCELLANEOUS.

Oil Circuit Breakers, for City of Footscray. Extended to July 17.

Pick Up Street Sweeping Machine, for City of Adelaide. July 28.

Power Graders (2), approx. 35 B.H.P., Diesel or kero. powered control, for Shire of Avon. June 19.

Stoneware Straights, various sizes, for Ararat Sewerage Authority. June 19.

Traffic Control Lights, for Borough of Ringwood. July 6.

Transformers:—Three (3) only 100 K.V.A., 6,600/415/240 volt., 3-phase, 50 cycle Outdoor Type Transformer, with standard tapplings and design, and controlled by an externally operated off-lead tap-changing switch; one (1) only 100 K.V.A., 22,000/415/240 volt., 3-phase, 5 cycle Outdoor Type Transformer, with standard tapplings and design, and controlled by an externally operated off-lead tap-changing switch, for City of Ararat. July 3.

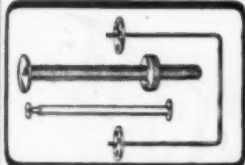
QUEENSLAND

GOVERNMENT RAILWAYS DEPARTMENT.

Rolled Steel Tyres, 4,000. July 20.

(Turn to page 73.)

BOOKBINDERS' HARDWARE



Brass Intercrews, turned from solid bar. "U" Transfer Binders and Binder Screws. Large stocks of all regular sizes. Special sizes made to order.

H. G. Goddard Pty. Ltd.
106 Devonshire Street, Sydney, N.S.W.

Telephone: MA 7834.

Also Manufacturers of Radio, Auto and Aircraft Fuses. Specialists in Automatic and Turret Lathe Repetition Engineering.

ELECTRICAL GRID RESISTANCES

One of our many Specialities

Contractors to N.S.W. Railways and 30 years in N.S.W. Tramways.

TAYLOR & WEARING

UNION FOUNDRY

George Street, Redfern, N.S.W.
Est. 1859. Tel.: MX 2118.

CHEMICALS—DRY COLOURS,
RAW MATERIALS FOR
INDUSTRY

H. BLEAKLEY & COY.

(1910) PTY. LTD.

397-399 KENT ST., SYDNEY.
Phones: BX 5761, BX 5762

Melbourne Office: H. Bleakley & Company (1910) Pty. Limited, C/o Agg & Giff, 18 Queen Street, Melbourne.
Phone: MU 3128.

DRUGS • FINE CHEMICALS
POWDERED METALS

FACTORY EQUIPMENT

"BURNER" Lathe Chucks

"MERCER" Dial and Cylinder Gauges

"DING DONG" Hackaw Blades

"MYFORD" Lathes

"COLEY" Thermometers

PAUL WITZIG & CO. PTY. LTD.
55 York Street, Sydney, N.S.W.

Telephone: BX 2147

NEW TENDERS — Contd

TASMANIA

PUBLIC WORKS DEPARTMENT.

Equipment—Medium Grader; Pneumatic Tyred Rollers (8); Tractors (8), Pneumatic Tyred; 40 h.p. Tracked Tractors and Bulldozers (5). June 22.

CURRENT TENDERS

The following tenders have appeared in previous issues and are still current.

COMMONWEALTH

POSTMASTER-GENERAL'S DEPARTMENT.

Barretters (Sch. C.6293). July 11.

Cable and Carrier Cable Systems (Sch. C.6304). July 4.

Canvas and Duck, for Mail Bags (Sch. V.6326). Aug. 10.

Carrier Telegraph Equipment (Sch. C.6286). July 20.

Components, for Hand Generators (Sch. C.6336). June 22.

Condensers (Sch. C.6292). July 20.

Lamps, Caps and Sockets (Sch. C.6324). Aug. 15.

Lead Sealers and Parts (Sch. C.6170). Aug. 3.

Magnetic Type Recorders (Sch. C.6303). July 27.

Mechanically Operated Spring-sets (Sch. C.6323). Aug. 1.

Microphone, Stands, and Cable (Sch. C.6316). Aug. 1.

Morkrum Printer Parts (Sch. C.6285). July 20.

Portable Tone Test Sets (Sch. C.6287). June 27.

Post Office Scales and Weights (Sch. C.6284). July 18.

Rectifier Elements (Sch. C.6325). June 22.

Ringing Equipment (Sch. C.6311). Aug. 1.

Routine Testing Equipment (Sch. C.6281). July 25.

Testing Instruments (Insulating Resistances), (Sch. C.6289). July 13.

Tools, Leadworking, Measuring and Miscellaneous (Sch. C.6246). July 20.

Wire Carrier Telephone Equipment, 12 Channel Open (Sch. C.6305). July 27.

GOVERNMENT RAILWAYS DEPARTMENT.

Steel Superheater Elements, for Locomotives. Extended to June 20.

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

Bedside Mats. June 27.

Electric Ovens. June 22.

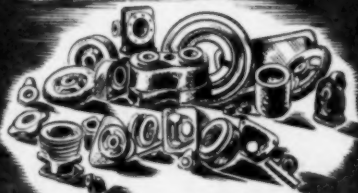
Lighthouse Optical Apparatus. June 22.

Lightweight Flying Suits. June 27.

Refrigeration Plant, Purchase of. June 22.

(Turn to page 74.)

C.B.D.



1ST

FOR FINE IRON CASTINGS

First for reliability and value... for freedom from casting flaws and defects... for their abrasion and shock-proof features... for their easy-to-machine qualities... for the use of finest available materials and time-tested craftsmanship... for pistons, repetition work, compressor parts, stationary engine components and machine tool castings.

C.B.D. PISTON CO.

370 DRYBURGH ST., NTH. MELBOURNE
Telephones: FJ 2527, FJ 2530

Australasian Representatives:

JOHNSTON & GASTON PTY. LTD.

**SAND and GRIT
WON'T HURT IT!**

MARINO FLEXIVANE PUMP

(Dowling Patent No. 18857/48)

This self-priming pump is unbeatable for engine cooling and bilge pumping and all small water pumping jobs. Capacity is 300 gals. per hour at 1,000 r.p.m. and no lubrication is necessary. Write for details.

Factory Representatives:

Farbury, Henty & Co. Ltd., Sydney. Farbury, Henty & Co. Ltd., Melbourne.
Farbury, Henty & Co. Ltd., Adelaide. Sandovers Ltd., Perth.
Max Germaine, 38 Collins Street, Hobart.

Manufactured by

MARINO PRODUCTS PTY. LTD.

BARRY PARADE, BRISBANE, QUEENSLAND



Don Spot Welders

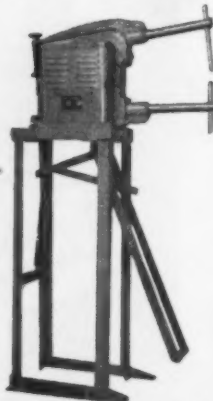
Spot Welding Advantages:

- Replaces Riveting, Brazing and Soldering.
- Stronger than riveting—up to 100%.
- Quicker—no marking out, drilling or riveting.
- Cheaper—current consumption extremely low.
- Junior Labour can operate machines.
- Clean finish—no distortion of metal.

We also manufacture a standard type floor model with the following features:

- Special electrode alloy for dissimilar metals.
- Arms easily adjustable to any position.
- Lower arm adjustable, giving deep span.
- Water cooling right to tip of electrodes.
- Pedal allows operation from any position.
- Fine current control readily accessible.
- Isolating switch and water cock provided.
- Reserve power—Transformer amply rated.
- Water circulation system visible to operator.

HEAVY AND SPECIAL
TYPES AVAILABLE



"DON" BENCH WELDER

Stand as illustrated is extra if required

Don Electrical Co. Pty. Ltd.
17 GIBBENS STREET, CAMPERDOWN, N.S.W.

Phone: LA 2839 (2 lines)

Victorian Agents:
SAMPSON BROS. PTY. LTD., 90 WILLIAM STREET, MELBOURNE
Queensland Agents:
ELECTRICAL AGENCIES, 193 ELIZABETH STREET, BRISBANE

IMPROVE YOUR PLANT EFFICIENCY

WE HAVE HAD A LONG EXPERIENCE IN THE DESIGN
AND MANUFACTURE OF

SPECIAL INDUSTRIAL EQUIPMENT

Let us study your plant and make suggestions for increased
production at Lower Cost.

Write for illustrated leaflets on standard BISHOP Machines and Systems.

BISHOP'S IMPLEMENTS PTY. LTD.
SUNSHINE RD., WEST FOOTSCRAY, MELBOURNE. Phone: MW 2201.

COPPER NAILS

COPPER Boat Nails, Copper Sheathing Nails, Copper
Wire Tacks, Copper Roves and Copper Clouts available
for prompt delivery. Special sizes and types made to
order. Detailed illustrated leaflet available on application.

Western Barbed Wire & Nail Pty. Ltd.

Offices and Works: 2 Gillies Street, ANNANDALE, SYDNEY.

Telephone: LM 2281



JOHN WHILE & SONS PTY LTD
CRYSTAL ST. PETERSHAM, N-S-W-LM4421

CURRENT TENDERS—Contd.

Steel Die Blocks, Purchase of.
July 18.

DEPARTMENT OF WORKS AND HOUSING.

C.I. Spigot and Socket Soil Pipes
and Fittings (3, 4, and 6 in.). June
27.

STATES

NEW SOUTH WALES

GOVERNMENT RAILWAYS DEPARTMENT.

C.I. Locomotive Cylinders (Sch.
CE-2714). June 20.
Carrier Telephone System, for
Chullora Workshops (Spec. 84).
Extended to July 5.
Coal Handling Equipment, for
Lake Macquarie Power Station
(Spec. 1263). July 5.
Concrete Pump, with 25 h.p.
Electric Motor (Sch. CE-1924).
June 19.

Dust Collectors (5), for Ultimo
Power Station (Spec. 1252). June
21.

Excavators, crawler mounted,
diesel powered (Sch. CE-2756).
June 27.

Induction Motor, 7½ h.p.; 5-step
Drum Controller; 5-min. rated
Register; 2 h.p. Solenoid Brake
and Double Pole, Iron Clad Limit
Switch (Sch. CE-8036). June 19.

Rectifier Units (4,000 KW) and
Energy Dissipating Resistor Units
(Spec. 1258). Extended to Sept. 6.
Self Lowering Jacks, 50 ton
capacity (Sch. CE-3444). July 6.

Transformers (4), 2,000 KVA,
33,000/2,200-volt. (Spec. 1265). June
28.

DEPARTMENT OF MAIN ROADS.

Concrete Pipes. June 20.
Gully Grates and Frames. June
20.

Jacks. June 20.
Metalwork and Machinery. Oct.
5.

Mild Steel Flats. June 20.
Ready Mixed Concrete. June
20.

Screening Machinery, for Gran-
ville. July 11.
Structural Steelwork, for Gran-
ville. Extended to July 11.

METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

Centrifugal Type Pumping Unit,
electrically driven, for Brimstone
Gully Coal Mine. June 27.

Concrete Mixing and Batching
Plants (2 or 3), approx. capacity
20 cu. yds. per hour. June 27.

Electrically driven Centrifugal
Type Pumping Units (3), for
Caringbah. June 27.

Galvanised M.S. Continuous
Weld Tubing (50 miles) of various
sizes and approx. 35,000 galv. M.S.
Tubulars. July 18.

(Turn to page 75.)



Fires in those days burned much brighter . .
damage nowadays is slighter—
firemen's tasks are also lighter

now they're using



UNDERWRITER

SUPER FIRE FIGHTING HOSE

SOLE MANUFACTURERS: LEWIS & TYLOR LTD. • CARDIFF • GREAT BRITAIN

Agents: WORMALD BROS. PTY. LTD. • Fire Protection Engineers since 1889 • Sydney, Newcastle, Melbourne, Brisbane, Townsville, Darwin, Adelaide, Perth, Hobart

157728

NEW TENDERS - Contd.

Vertical Spindle Centrifugal Type Pumping Units (2), electrically driven, for Upper Cordeaux. July 25.

STATE CONTRACTS CONTROL BOARD.

Accounting Machines. June 20.

SYDNEY COUNTY COUNCIL.

Cable (\$3,000 volt.) and Pilot Cable (Spec. 1423). June 29.

Compensators and Relays, for Voltage Regulating Equipment (Spec. 1407). June 22.

D.C. Switchboard, 240 volt for Pyrmont "B" Power Station (Spec. 1424). June 29.

Metal Clad Neutral Switching Equipments, 6000 volt, for sub-stations (Spec. 1415). August 10.

Metal Clad Switchgear (11,000 volt, 250 MVA), for City Sub-station (Spec. 1382). August 17.

Metal Clad Switchgear (\$3,000 volt.), for Homebush Sub-station (Spec. 1403). Aug. 17.

Motor Driven Vacuum Cleaning Plant and Piping, fixed type, for Bunnerong "B" Power Station (Spec. 1402). Aug. 10.

Oil Immersed Current Limiting Reactors for City Sub-station (Spec. 1348). Extended to June 22.

Outdoor Combined Switches and Fuses, 11,000 volt., high rupturing capacity (Spec. 1420). Aug. 31.

Outdoor Combined Switches and Fuses, 11,000 volt., high rupturing capacity (Spec. 1420). Aug. 31.

Storage Battery and Battery Charging Equipment, for City North Sub-station (Spec. 1400). June 22.

Substation Relay Group Equipment, for City A.C. Network Signal Equipment (Spec. 1408). Aug. 17.

Vacuum Cleaning Plant, fixed type, motor driven, for Pyrmont "B" Power Station (Spec. 1429). Aug. 10.

Vacuum Cleaning Plant, motor driven, fixed type, for Pyrmont "B" Power Station (Spec. 1402). Aug. 10.

Voltage Cables, high and medium, for Bunnerong Power Station (Spec. 1415). June 29.

MISCELLANEOUS.

Boiler Feed Pumps, for Clarence River County Council. July 25.

Centrifugal Sludge Pump, Electrically Operated, for Shire of Shoalhaven. June 26.

Crushing Plant, for Shire of Tenterfield. June 19.

Diesel Electricity Generating Set (75 KVA), comprising Diesel Engine and Alternator and Exciter, and Switchboards with meters, Purchase of, from Municipality of Bourke. June 30.

Diesel Road Roller, 16-12 tons weight, Purchase of, from Opamhurst Shire Council. June 19.

F.M. Radio Communication Service of one Central Station and five (5) Mobile Stations, for Sutherland Shire Council. July 5.

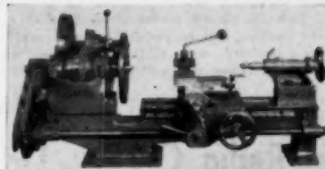
Items of Road Plant:—Bulterrier Grader—powered by International 112 Engine, 8 ft. blade, and fitted with scarifier, weight 7,800 lb. Fair running order; Crude Oil Roller, weight approximately 12 tons—rear wheel broken. Not in running order; Tar Kettle—200 galls. capacity, mounted on steel wheels; Engine—approximately 18 h.p., mounted on trailer. Pneumatic wheels, but not shod. Purchase of, from Shire of Lyndhurst. June 23.

Generating Sets:—4-Cylinder VXA Diesel Engine, 76 H.P., 428 R.P.M., Direct coupled to Alternator. Alternating current generating 50 K.V.A. Complete with Switchboard, with all necessary equipment; 3-Cylinder VXA Diesel Engine and Alternator, 57 H.P., 428 R.P.M. Direct coupled to Alternator. Alternating current generating 51.5 K.V.A. Complete with Switchboard with all necessary equipment, Purchase of, from Municipality of Peak Hill. June 27.

Motor Grader, heavy duty, tandem drive, equipped with Scarifier.

(Turn to page 76.)

"REXMAN" PRECISION BUILT 4½ INCH. BACK-GEARED, SCREW-CUTTING



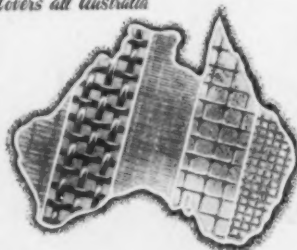
BENCH LATHES

H. R. GOFF PTY. LTD.

328 Flinders Street
MELBOURNE
Phone: MU 1902

Wingello House, Angel Place
SYDNEY
Phone: BL 2139

"Covers all Australia"



WOVEN Wire Gauge

of every description
manufactured in steel,
galvanised, brass,
copper, monel, tinned,
bronze, stainless steel,
silver.

For Mining Screens, Quarries, Harvesters, Grading Metal,
Barley, Malt, Flour, Petrol.

WIRE WORK OF EVERY DESCRIPTION

Such as Baskets for Annealing, Heat Treatment, Plating
and all types used in manufacturing Oven Racks, Griller
Grids, Ice Chest and Refrigerator Trays — Hoalery Machine
Belts, "Melwire" Ties.

TUBE AND PIPE WORK

Guards for Windows and Machinery, Chain Link Netting
for Tennis Courts, Fencing, Partitions and Industrial Hand
Trolleys. Conveyor Belts in all metals for all manufacturing
purposes.

MELBOURNE WIRE WORKS

85-99 CREMORNE STREET RICHMOND VICTORIA

EST. 1852

'Phone: JB 2341 (5 lines)

Telegrams and Cables: "Melwirworks"

Bare and Insulated Wires for ELECTRICAL, RADIO, ELECTRONIC AND AUTOMOTIVE INDUSTRIES

We are manufacturers of bare and tinned copper wires, bunched and
stranded copper cables and flexibles; and copper braided strapping.
We also manufacture plastic insulated wires, cables and flexibles, and
asbestos range wires and flexibles; neon sign cables and F.M. and low
loss polythene insulated cables.

Send us your samples and full specifications

International Radio Co. Pty. Ltd.

254 CASTLEREAGH STREET, SYDNEY, N.S.W.

New Zealand: International Radio Company, Ltd., 433 Queen
Street, Auckland.

CURRENT TENDERS—Contd.

fler, for Shire of Tamarang. June 22.

Road Making Equipment: Diesel powered medium type road grader, 12000 lb. to 14,000 lb. weight. Tractor, pneumatic tyred, kerosene powered, 15-20 H.P. Power greasing unit, suitable for motor vehicles and mechanical equipment. Low Level Float, end loading type for mechanical equipment up to 10 tons, with provision for attachment to truck. Kerosene cleaning apparatus for auto parts and machinery, for Municipality of Canterbury. June 19.

Standard Corrugated Asbestos Roof, for Newcastle City Council. June 21.

Switchgear, truck type (11,000 v.), for Shire of Blacktown. July 4.

Truck Type Switchgear (11,000 v.), for Shire of Blacktown. July 4.

VICTORIA

GOVERNMENT RAILWAYS DEPARTMENT.

All Geared Head, S.S.S. Lathes (12-17 inch swing). June 21.

Brattice Cloth. June 28.

Control Equipment. August 9.

Insulated Copper Wire. June 21.

Isolators and Air Break

Switches. June 21.

Lathes, 12 inch and 17 inch.

June 21.

Sectional Water Tanks and

Towers. July 26.

Supervisory Control Equipment.

Control Desk Key Panels and

Diagram Panels. Aug. 9.

Wire Mattresses. June 21.

CITY OF MELBOURNE.

Fabricated Steelwork for Gal-

leries and Ladders (Spec. 719/E).

Extended to July 3.

Gate Valves (2), 30 in. diameter

(Spec. 718/E). June 19.

Radial Drilling Machine (Spec.

722/E). July 3.

Road Traffic Control Signals.

Extended to June 21.

Steel Shelving (Spec. 715/E).

June 19.

COMMONWEALTH RAILWAYS DEPARTMENT.

Fishbolts and Nuts. July 4.

DEPARTMENT OF CIVIL AVIATION.

Altitude Settings Indicators
(Sch. 292). June 20.

Carrier Telephone Equipment
(Sch. 295). June 20.

Radio and Electrical Test
Equipment (Sch. 294). June 27.

DEPARTMENT OF PUBLIC WORKS.

Central Heating and Hot Water
Service, for Ballarat College.
June 20.

DEPARTMENT OF WORKS AND HOUSING.

C.I. Water Pipes and Specials.
July 4.

(Turn to page 77.)

ANTI-FRICTION WHITE METAL

Graded for All Uses.

THE FAMOUS

"Waratah Brand"
WILSON WARATAH METAL
CO. PTY. LTD.

Norman Ave., East Brisbane.

Stocks available at

J. BLACKWOOD & SON LTD.
86 Sussex Street, Sydney, and

SMITH & REID, Scott Street,
Newcastle.

The Finest House in
Australia for
Engravings of Every
Description

The Randle
Photo Engraving Co.
PTY. LTD.

Photo. Engravers, Stereotypers,
and Designers

RANDLE HOUSE,
73 FLINDERS STREET,
DARLINGHURST, N.S.W.

'Phones: FA 3138-9

Some products of
THE
POWER ELEMENT
CO.

251 New South
Head Road and
Herbert Street,
Edgecliff, N.S.W.,
Australia.



Air cylinders . . . Air hoists . .
Squeeze riveters . . . Air vices . .
Air valves . . . Air-operated pumps
. . . Pneumatic presses . . . Marking
machines . . . Cement pumps . . .
Sludge pumps . . . Hydro-pneumatic
booster pumps . . . Diaphragm valves
. . . Rivet spinning tools . . . Pneu-
matic furnace door operators . . .
General purpose thrustors and power
diaphragms for mechanising industry.
POWER-ELTOR and NEVANDER
Industrial Equipment

CURRENT TENDERS—Contd.

Chip and Sawdust Extraction Plant, for Bendigo. June 27.
Galvanised Water Pipes. July 4.
New Steam Roller, for Laverton. June 27.

MELBOURNE AND METROPOLITAN BOARD OF WORKS.

Concrete Mixer-agitator Equipment, for Upper Yarra Dam. June 20.
Concrete Production Plant. June 20.
Flat Tracing Paper (17 x 27 inches), 40 reams. June 20.
Pumping Equipment, for Concrete, for Upper Yarra Dam. June 20.

MELBOURNE HARBOUR TRUST.

Bronze Valves and Cocks (Spec. 49-50/338). June 28.
C.I. Fullway and Reflux Valves (Spec. 49-50/339). June 28.
Chains, for Dredging Plant. July 14.
Control Instruments for Cooling Towers (Spec. 50-51/7). July 5.
Outboard Marine Engine (31-4 h.p.). June 23.

POSTMASTER-GENERAL'S DEPARTMENT.

Conduit and Conduit Fittings (Sch. V.354). June 27.
Motor-cycle Parts (Sch. V.358). July 4.
Portable Lavatories (Sch. V.360). June 27.
Power Board Fittings (Sch. V.361). July 4.
Rectifiers (Sch. V.364). July 4.
Relays, 2,000 Type Equipment (Sch. V.357). June 27.

STATE ELECTRICITY COMMISSION.

Belt Conveyor System (Spec. 50-51/4). Aug. 2.
Control Cable, V.R., or P.C.I. (Spec. 50-51/1). Aug. 16.
Equipment of Centralised Control of Consumer Loading (Spec. 49-50/171). June 21.
Fusion Welded M.S. Air Receivers (Spec. 50-51/8). July 5.
Induced Draft Fans, Steel Flues, Dust Eliminators and Structural Steel Housing (Spec. 50-51/5). Aug. 16.
M.S. Water Storage Tanks, with Accessory Equipment (Spec. 50-51/11). July 5.
Motor Operated Fullway Valves (Spec. 49-50/335). June 28.
Outdoor Switchgear and Accessories, 66,000 and 22,000 volt. (Spec. 50-51/6). Aug. 16.
Switchgear (220,000 volt.) and Accessories (Spec. 49-50/251). Extended to July 26.
Telephone Cable (Spec. 49-50/291). July 12.
Telephone Cable Loading Coil Assemblies (Spec. 49-50/322). June 21.

STATE RIVERS AND WATER SUPPLY COMMISSION.

Electric Pumping Units (4), motor-driven, for Red Cliffs. June 30.

Pipe and Bolt Screwing Machine. June 20.

Pressure Pipes, 126 miles, 3-12 inch diameter, material either Asbestos Cement, Cast Iron, or Spun Iron. June 20.
R.C. Pipes, 15,312 ft. of various diameters. June 20.

STORES SUPPLY AND TENDER BOARD.

Paper, for Department of Interior (Sch. C.T.B. 883). June 29.
Printing Paper (Sch. C.T.B. 882). June 22.

MISCELLANEOUS.

Garbage Handling Plant, for City of Fitzroy. June 26.
Power Grader, heavy or medium-heavy, for Shire of Bet Bet. June 23.
Pressure Pipes, 6,400 lin. ft. of 12 inch diameter, for Moe Waterworks Trust. June 20.
Road Traffic Control Signal Equipment, for City of Kew. July 11.
Water Filtration and Purification Plant;—Flocculating and Sludge Scraping Mechanisms; Filter Control Valves; Rate Controllers, Indicators, and Connecting Pipework; C.I. Pipes and Fittings, for Treatment Plant Units; Chemical Dry Feeders, etc.; Solution Mixing Equipment, Chlorinator Equipment, etc., for Mildura Urban Water Trust. July 10.
Water Purification Plant;—Flocculating and Sludge Scraping Mechanisms; Filter Control Valves; Filter Rate Controllers, etc.; Cast Iron Pipes and Fittings; Supply of Chemical Dry Feeders, for Shepparton Urban Water Works Trust. June 21.

QUEENSLAND

GOVERNMENT RAILWAYS DEPARTMENT.

Diesel Electric Locomotives (10). June 30.

STATE ELECTRICITY COMMISSION.

Alternator, 6.6 KV, 135 KW (Spec. 194). July 19.
C.I. Pipes and Specials, C.I. Twin Strainers and C.I. Gate Valves, for Air and Oil Cooler Circulating Water (Spec. 212). June 21.
C.I. Pipes and Specials (Spec. 211). July 12.
Control Equipment, for Circulating Water System (Spec. 215). July 19.
Generating Plant, gas-oil-oil driven (Spec. 219). July 5.
Pipes and Specials, C.I., C.I. Twin Strainers and Gate Valves, for Air and Oil Cooler Circulating Water. June 21.
Power House Switchgear, low tension (Spec. 203). June 21.
Power House Switchboards (Spec. 195). Aug. 9.
Steam and Feed Water Valves for Boilers, Wide Bay Regional Electricity Commission (Spec. 193). Ext. to June 21.
Steam and Water Valves, high and low pressure (Spec. 193). June 21.

BIGGER PRODUCTION AT LOWER COST

MOVE LOADS UP TO 2000lb.
QUICKLY, EFFICIENTLY AND
AT LOWEST OPERATING
COST WITH THE LATEST

Tut-Truk



Designed and developed as a floor truck to serve those industrial handling needs that do not require material to be stacked, the Tut-Truk speeds up operations at lowest possible cost.

Simple in design, the Tut-Truk offers what every operator seeks—SIMPLICITY. Sound design makes the Tut-Truk dependable—efficient—reliable—speedy. With the Tut-Truk on the job you will find inter-plant hauling definitely speeded up.

Full details and quotations for IMMEDIATE DELIVERY promptly sent on application.

LARGEST SUPPLIER OF CONSTRUCTION
EQUIPMENT IN AUSTRALIA

Tutt-Bryant

ADELAIDE — BRISBANE — MELBOURNE — NORTHERN
TERRITORY — PERTH — SYDNEY — TOWNSVILLE

SERVICE CENTRES THROUGHOUT
AUSTRALIA

SOUTH AUSTRALIA

SUPPLY AND TENDER BOARD.

Carrier	Telephone	System.
June 19.		

WEST AUSTRALIA

GOVERNMENT TENDER BOARD.

Centrifugal Pumps. June 22.
Diesel Mechanical Locomotives (18). July 20.

(Turn to page 72.)

Steam Turbo Alternators (Spec. 200). Aug. 30.

Steam Turbo Alternator (Spec. 196). Aug. 16.

Switchgear, L.T., Power House (Spec. 203). June 21.

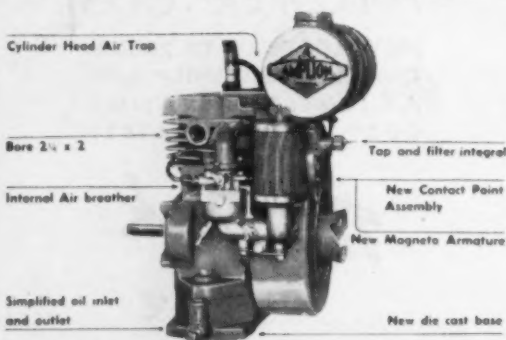
Water Tube Boilers (Spec. 200). Aug. 30.

MISCELLANEOUS.

Low Voltage Sub-station Equipment, for Townsville Regional Electricity Board. July 17.

Switchgear (11,000 volt.), for Townsville Regional Electricity Board. Aug. 1.

NEW RELEASE of amazing 40 lb. 2½ Horse power Petrol Engine!



Opens up an entirely new field for operating pumps, portable power tools, generating plants, etc.
Availability August.

LIST PRICE: £39/10/-

SPECIAL DISCOUNT TO MANUFACTURERS

Full details from

AMPLION (A'sia) PTY. LTD.

36-40 Parramatta Road, Camperdown. LA 2828.

A **G2** GRADE for every trade

This trade mark covers a wide range of modern cleaning detergents, graded to your special trade requirements. Look through the list and you'll find a modern G2 Cleaner especially suited for your special purpose.

- G2 Dairy Cleaner — for cleaning milking machines
- G2 Red Label — for cleaning metals.
- G2 Blue Label — for extra heavy contamination.
- G2 Brown Label — for cleaning paintwork.
- G2 Yellow Label — for dishwashing machines.
- G2 Gold Label — for hand dishwashing.
- G2 White Label — for cleaning in food industries.

Write for information about your cleaning problem — it will be done quicker and easier with the right G2 Grade.

DISTRIBUTORS: Melbourne, Adelaide, Perth, Hobart, Launceston —
HARDIE TRADING, LTD. Sydney and Brisbane — JAMES HARDIE
TRADING CO. PTY. LTD.

G2 is manufactured by

HICKS BROTHERS CHEMICALS, 136 Bridge Rd., Richmond, Vic

CURRENT TENDERS — Contd.

Diesel Electric Main Line Locomotives (48). July 27.
Floating Dredge Plant. Extended to June 22.
Gas Oil, for S.E.C. June 22.
M.S. Rolled Sections. July 6.
Mobile Cranes, Welding Machines, Portable Concrete Mixers, Portable Compressor Unit and Concrete Vibrators. June 22.
Portable Concrete Mixer (15 cu. ft.). June 22.
Roll Jaw Breakers, for S.S.M. June 22.
Steam Travelling Cranes. Extended to July 8.
Steel Rivets, for Railways. July 20.
Transformers, for S.E.C. June 22.

TASMANIA

HYDRO-ELECTRIC COMMISSION.

Automatic Self Closing Valves (5), 90 inch diameter. Aug. 1.

Accepted Tenders

COMMONWEALTH

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

Lockwood Padlocks (Req. No. 3086). Ogden Industries Pty. Ltd., £566/13/4.
Bow Shackles, 1-in. (Req. No. 3099). Spring Replacement Works, £522/8/-.
Hexagon Steel Bar (Req. No. 3102). Bruntons Bright Steel Pty. Ltd., £294/1/8.
Steel Rounds (Req. No. 3104). Broken Hill Pty. Co. Ltd., £2,512/18/-.
Shell Steel (Req. No. 3105). Broken Hill Pty. Co. Ltd., £314/2/-.
Mechanite Castings (Req. No. 3106). Grimwade Castings Pty. Ltd., £396/10/9.
Ingots (Req. No. 3107). Melbourne Iron & Steel Mills Pty. Ltd., £991/5/-.
Roller Turning Toolholder (Req. No. 3129). McPhersons Ltd., £609/14/8.
Tyres and Tubes (Req. No. 3134). Dunlop Rubber (Australia) Ltd., £682/0/2.
Tyres and Tubes (Req. No. 3137). Goodyear Tyre & Rubber Co. (Aust.) Ltd., £504/15/7.
Tyres and Tubes (Req. No. 3138). Olympic Tyre and Rubber Co. Ltd., £500/10/1.
Tyres and Tubes (Req. No. 3140). Dunlop Rubber (Australia) Ltd., £937/14/6.
Tubes (Req. No. 3141). Olympic Tyre & Rubber Co. Ltd., £347/6/-.
Rotax Time Switches (Req. No. 3143). Rotax (Australia) Ltd., £238.
A.W.A. Pulse Generator and Modulator (Req. No. 3144). Amal-

(Turn to page 79.)

HOBSON ENGINEERING CO

★ REPETITION SPECIALISTS ★

301 HENDERSON ROAD, ALEXANDRIA, N.S.W.

Approved A.I.D. Inspectors. Capstan and Auto Lathe Work to 11in. capacity. Thread Rolling, Press Metal Works, Sheet Metal Works, Steel Fabrication, Oxy and Electric Welding.

LA3414 LA1871

COAL & COKE

for Manufacturers, Blacksmiths, etc.

BEST STEAMING COAL for all classes of Boilers and Household purposes

PROMPT DELIVERY

JONES BROS. COAL

PTY. LIMITED

Bridge Road, Pyrmont,

N.S.W.

Phone: MW 2691 (5 lines)

MACHINING CAPACITY

Engine lathe work from 7in. to 11in. centres, Milling, Slotting and Drilling. Also some capacity for both Chucking and Bar Turret work (Ward No. 7 Comb Turret).

COX & BATES

116 Little Lonsdale Street
Melbourne

GENERAL ENGINEERING MOTORISING AND INDIVIDUAL DRIVES PLANT MAINTENANCE

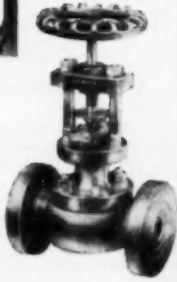
Eric Hayman

278 CITY ROAD

SOUTH MELBOURNE

Telephone: MX 2880

M.E. MACK
VALVES
FOR EFFICIENCY & ECONOMY



Forged Steel Globe Valves with Stainless Steel Valves and seats for service with steam pressures up to 900 pounds per square inch and temperatures up to 800 degrees Fahrenheit. These valves are also made in the Parallel Slide type.

INTERSTATE REPRESENTATIVES:

Alfred Snashall, Anthon Pty. Ltd., 72-74 Eagle Street, BRISBANE, QLD.	C. H. Hine & Co., Howard Hill, off Howard Street, PERTH.	Gilbert A. Smedley, 25 Trevailly Road, LAUN- CESTON.
Alfred Martin & Sons Ltd., 28 Hanson Street, ADE- LAIDE.	J. F. Hargreaves Ltd., 22 Jervois Quay, WELLING- TON.	Steam Plant Equipment Pty. Ltd., 2 Hunter Street, SYDNEY.

M.E. MACK & CO. PTY. LTD.
STEAM PLANT EQUIPMENT AND SERVICE
47 VICTORIA ST. MELBOURNE, VJ 3289, FJ 3348.

Mechanical Moulded and Extruded
RUBBER PRODUCTS
To Your Own Specifications
IN NATURAL AND SYNTHETIC RUBBER
INCLUDING
SPONGE • AUTOMOTIVE RUBBERS • HOSES



SALES DIVISION
CATHCART HOUSE
114 CASTLEREAGH STREET
SYDNEY, N.S.W.

FACTORY
RIVER STREET
SILVERWATER
N.S.W.

INTERSTATE REPRESENTATIVES:
VIC.: A. V. Watt & Sons, 14-16 St. Francis Street, Melbourne.
S.A.: Neville Collins Limited, 154 North Terrace, Adelaide.
CONTRACTORS TO STATE GOVERNMENT DEPARTMENTS

Accepted Tenders—Continued

gamated Wireless (Aust.) Ltd., £238/8/6.
Tyres and Tubes (Req. No. 3146). Goodyear Tyre and Rubber Co. (Aust.) Ltd., £1,954/13/4.
Tyres and Tubes (Req. No. 3147). Dunlop Rubber (Aust.) Ltd., £458/18/-.
Thread Chasers (Req. No. 3149). Alfred Herbert (A'asia.) Pty. Ltd., £383/12/6.
Tyres and Tubes (Req. No. 3150). Olympic Tyre and Rubber Co. Ltd., £347/6/-.
Tyres and Tubes (Req. No. 3153). Olympic Tyre and Rubber Co. Ltd., £706/10/4.
Tyres and Tubes (Req. No. 3154). Olympic Tyre and Rubber Co. Ltd., £759/14/6.
Tyres and Tubes (Req. No. 3155). Dunlop Rubber (Australia) Ltd., £634/1/8.

V. & V. Graining Machine (Req. No. 3157). Bell & Valentine Pty. Ltd., £986.
Folding Masonite Camp Tables (Req. No. 3204). J. Hickmer & Sons Pty. Ltd., £789/11/8.
Cardboard Spare Parts, Cartons (Req. No. 3205). Weaver Box Co., £393/18/1.
Arkansas Slips, Oilstones, Eliza Tinsley Pty. Ltd., £235/3/4.
Jack Planes (Req. No. 3206). Pope Products Ltd., £572/12/6.
Amber Perspex (Req. No. 3209). Imperial Chemical Industries of Aust. & N.Z. Ltd., £670/7/6.
Yallourn Brown Coal, for Burning (Req. No. 3210). State Electricity Commission, £2,500.
Hammer Handles (Req. No. 3213). William Edwards & Co., £276/11/9.
Soda Acid Type Fire Extinguishers (Req. No. 3216). Worms Ltd Bros. (South) Ltd., £2,500.

Latrine, Reams, Paper (Req. No. 3218). Andrew, Jack, Dynon & Co. Pty. Ltd., £2,092/3/9.
Screened Coke (Req. No. 3219). The Metropolitan Gas Co., £23,333/6/8.
Medical Supplies (Req. No. 3220). Tromax Pty. Ltd., £3,440.
Medical Supplies (Req. No. 3221). H. J. Falk, £2,711/2/8.
Twill, Blue, Jackets (Req. No. 3285). Rockingham Clothiers Ltd., £9,323/15/10.
Kitchenware (Req. No. 2948). A. G. Way & Co. Pty. Ltd., £361/14/5.
Frequency Shift Converters (Req. No. 2880). Standard Telephones & Cables Pty. Ltd., £43,512.
Instrument Cases (Req. No. 3039). A.F.C.O. Cases Pty. Ltd., £612/10/-.

Swimming Trunks (Req. No. 3041). Botany Mills Ltd., £312.
Aluminium Bar (Req. No. 3088). Perkins (Aust.) Pty. Ltd., £4,127/3/9.
Aluminium Bar (Req. No. 3089). Gilbert Lodge & Co. Pty. Ltd., £11,757/10/5.
Mild Steel, Flat Bar (Req. No. 3097). Broken Hill Pty. Ltd., £202/17/3.

NEW SOUTH WALES

DEPARTMENT OF PUBLIC WORKS.

Heater, for State Rivers and Water Supply Commission, Midco Pty. Ltd., £37.

(Turn to page 80.)

FIXOL

High-Grade
Industrial

COLD GLUES...GUMS...PASTES

A Grade for Every Trade — AUSTRALIAN-MADE

Manufactured by

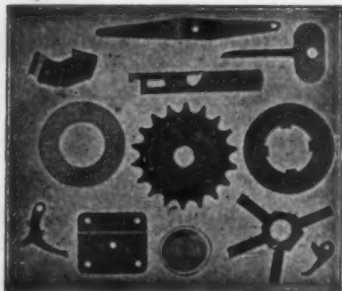
W. E. WOODS LIMITED

Phones: FA 1191, FA 1192, FL 4440.

38-42 COLLINS STREET, SURBY HILLS, SYDNEY

AGENTS: H. W. Woods Pty., Ltd., Melbourne; O. A. Farr, Adelaide; L. F. Harrison & Co., Brisbane; H. Stone, Ltd., Perth.

Light Metal Stampings



The same Accuracy, Quality and Durability that went into the manufacture of vital aircraft parts during the war are now incorporated in all our unlimited variety of peace-time products. Enquiries by 'phone or letter will receive prompt attention.

A. H. MACKIE

9 Therry Street, MELBOURNE.

'Phone: F 3629 (2 lines).

SHEET METAL MACHINERY

POWER PRESSES
PAN BRAKES
GUILLOTINES
FOLDERS, Etc.

Early Delivery

RYDE STEEL WORKS PTY. LTD.

135-139 Church Street, Ryde, N.S.W.

Tels.: Ryde 543-4.



FANS

OF ALL DESCRIPTIONS

DEHYDRATING — VENTILATING
EXHAUST — DUST REMOVING

R. H. HALLIDAY
Engineer

Rowen and Andrews Sts., Adelaide.

Mechanical and Structural Engineering

All Classes of Machine Work. Profile Cutting with Oxygen Flame Machine. Deep Drilling a Specialty. Electric, Oxy and Spot Welding. Pipe Bending and Fabrication.

BAKER ENGINEERING PTY. LTD.

181 Parramatta Road, Auburn, N.S.W.

'Phone: UX 0007.

Accepted Tenders—Continued

Heaters, for Public Works Department. Mideco Pty. Ltd., £147.
Ventilation Equipment, for Malvern Girls' School. W. P. Denton Pty. Ltd., £220.

Fittings, for Colac High School. W. Uebergang, £172/16/-.

WEST AUSTRALIA

TENDER BOARD.

Ammonia Compressor, "Light-foot," 10½ in. x 10 in., twin cylinder, vertical, £2,318. J. Wildridge & Sinclair.

Silprip Elec. Motor, A. 190, 125 h.p., £1,087. British General Electric Co.

Bolling Pans, steam jacketed, 20-gal., two, £253. Boltons Pty. Ltd.

Condensing Units, "Rex," engine driven, two, £294 ea. Producer Manufacturers Ltd.

Residual Bitumen, 80/100 penetration, 3,000 tons, £17/10/4 per ton. Caltex Oil (Aust.) Pty. Ltd.

Irrigation Output, Item 1, £354; Item 2, £24/16/-; Item 3, £41/10/-; Item 4, £18/6/8; Item 5, £2/15/10; Item 6, £3. McPherson's Ltd.

RADIO AND TELEPHONE MANUFACTURERS.

FEDERAL COUNCIL FOR 1950-51.

The Federal Council of the Electrical, Radio and Telephone Manufacturers of Australia has appointed the following office-bearers for 1950-51:—

President: Mr. J. Wilson, Wilson Electric Transformer Co. Pty. Ltd., Crockford Street, Port Melbourne, Victoria.

Vice-President: Mr. S. E. Barratt, Australian General Electric Co. Pty. Ltd., Percy Street, Auburn, New South Wales.

Immediate Past President: Mr. R. J. W. Kennell, E.M.A.I.L. Ltd., Castlereagh Street, Sydney, New South Wales.

Secretary: Mr. C. B. Swyer, Victorian Chamber of Manufacturers, 312 Flinders Street, Melbourne, C.I. Telephone: MB 2151.

Councillors: Mr. L. P. R. Bean, Stromberg-Carlson (Australasia) Pty. Ltd., 118 Bourke Road, Alexandria, New South Wales; Mr. N. C. Burgess, Australian General Electric Pty. Ltd., 198 Burnley Street, Richmond, Victoria; Mr. W. G. Gerard, Gerard Industries Ltd., Park Terrace, Bowden, South Australia; Mr. K. G. Healing, A. G. Healing Ltd., 167 Franklin Street, Melbourne, C.I.; Mr. Ralph Hocking, Hocking Water Heater Co. Pty. Ltd., 415-417 Illawarra Road, Marrickville, New South Wales; Mr. F. J. Scully, Thermex Electric Water Heaters Pty. Ltd., 32 McLachlan Street, Valley, Brisbane, Queensland; Mr. L. M. Stuart, Radio Corporation Pty. Ltd., 126

(Turn to page 81.)

STANLEY SPRING MATTRESS

AND

CUSHION UNITS

LAST A LIFETIME UNDER ANY CLIMATIC CONDITION

INVESTIGATE THE STANLEY SPRING UNIT

STANLEY SPRING CO. PTY. LTD.

21 Beeson St., LEICHHARDT, 'Phone: LM 1919. N.S.W.

SCIENTIFIC INSTRUMENT MAKERS

Experts in all motion picture mechanism. Fine gear cutting a specialty. (Rear, helical, bevel, racks, worms and wheels), Reduction Gearboxes, Speedometer and Carburettor Parts, Small Motor Fittings, Fine Mechanical Work. Patents Developed.

C. ALGER & SON

25-29 MARKET LANE, (off 128 Bourke Street) MELBOURNE 'Phone: JM 1879

CANISTER MANUFACTURERS

We make all the Latest Styles of Canisters and Containers, Decorated or Plain. For Paints, Oil, Tea, Lollies, Talcum Powder, Ointment, Tube Clips and all classes of Tin Packing. Metal Stamping done for the Trade.

MORRIS, MCMAHON & CO.

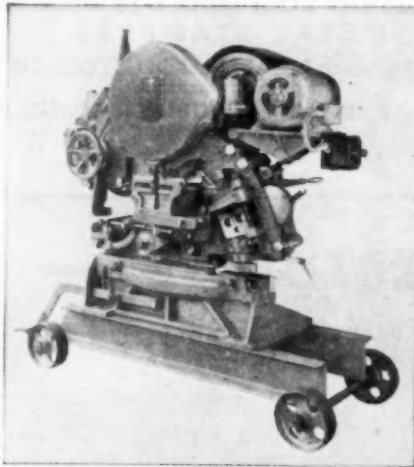
Cowper Street, Marrickville, SYDNEY, N.S.W. 'Phone: LA 1220

Brass Finishing AND General Engineering

We Specialise in CHROME PLATED FITTINGS AND HIGH PRESSURE PLUMBERS' BRASSWARE

Donald Engineering Co.

Rear of 68 Holmes Street, EAST BRUNSWICK, VIC. 'Phone: FW 1940



"Besco" Universal Punching, Shearing, Cropping and Notching Machines, "K.S. Series," range of sizes.

"BESCO" UNIVERSAL PUNCHING SHEARING CROPPING and NOTCHING MACHINE

We will be pleased to submit quotations for these machines and any other "BESCO" BAR CROPPING and PLATE WORKING MACHINES

Contact Sole Australian Agents:—

ROCKLEY MACHINERY COMPANY

28 MARKET STREET, SYDNEY

Telephone: MA 7898

Grant Street, South Melbourne, Victoria.

POTTER'S WHEELS WITH BEARINGS.

English pottery firms are fitting bearings to their potter's wheels at a great pace these days because they have discovered that equipped with bearings the wheels require less maintenance and give better service, according to Mr. Jack Harrison, of Bearing Service Company of Australia.

Mr. Harrison was commenting on an overseas announcement that after a series of experiments a Chesterfield firm, Pearson and Co. Ltd., had fitted bearings to all its wheels.

He said that pottery firms generally were beginning to realize that the saving in maintenance costs more than justified the fitting of bearings.

The old plain bearing wheels constantly required attention and some of them were continually in the fitting shop, thus necessitating high expenditure on maintenance as well as restricting production.

Mr. Harrison said that Australian firms were looking into the possibilities of fitting bearings to their wheels and he expected that there would be a gradual change-over to bearings here as the benefits became more widely recognised.

Supplies of suitable bearings were now available here.

ANALYSIS OF STEELS.

The Standards Association of Australia announces that, as part of the revision of Australian Standard K1-1928, "Sampling and Analysis of Plain Steels, Alloy Steels and Pig Iron", it is proposed that a new Part III for "Carbon in Steel and Low-Carbon Ferro-Chromium" will be inserted.

This proposed Part III is recommended by the committee concerned to be Part II of British Standard Specification No. H21-1948, with its amendment No. 1 of January, 1949.

For Australian conditions it is proposed that in the present text of the British Standard, a further alternative for the absorption train be that manganese dioxide be precipitated on pumice, with the method of preparation described in the Journal of the Society of Chemical Industry, April, 1945. Also in Section 6, Note 2, of the British Specification it is recommended that an addition be made, "Tin may be used as an accelerator."

Copies of the proposed endorsement schedule incorporating the method of preparation can be obtained from the Standards Association of Australia headquarters, Science House, 157 Gloucester Street, Sydney, to which address, also, constructive comments on the proposal should be sent by 15th August.

Late Open Tenders

NEW SOUTH WALES

DEPARTMENT OF MAIN ROADS.

Concrete Pipes. June 27.
Crimped Wire Mesh Panels. June 29.
Gas Range. June 27.
Metallic Tubing. June 27.

GOVERNMENT RAILWAYS DEPARTMENT.

Refrigeration Units (Sch. CE-8114). June 28.
Transformers (4), 2,000 KVA, 33,000/2,200 volt. (Spec. 1265). June 28.

MISCELLANEOUS.

Bull Terrier Speed Patrol; Manual Control, 8 ft. blade, weight approx. 3,500 lb., pneumatic tyres, Purchase of, from Municipality of Penrith. June 27.
Plant:—Tractor, fitted with equipment for loading and dosing, powered with a Diesel motor of 26-36 h.p.; Heavy-duty road grader, approx. 22,000 lb., powered with a Diesel engine, 60-100 h.p. for Shire of Wollondilly. July 17.

QUEENSLAND

STATE ELECTRICITY COMMISSION.

Concrete Pipes, reinforced (Spec. 225). July 19.

Gas or Gas-cum Oil Engine (100-150 h.p.). June 26.
Steam Piping and Valves (Spec. 229). July 12.

GOVERNMENT RAILWAYS DEPARTMENT.

Locomotives, Diesel, electric. July 14.
Machine Tools. July 13.
Steel Rails and Fastenings. June 26.

BRISBANE CITY COUNCIL.
Distribution Transformers, 500 KVA and 1,000 KVA. July 28.
Transformers, for Tannymore Power House. June 23.

SOUTH AUSTRALIA

GOVERNMENT RAILWAYS DEPARTMENT.

Tractors (3), 20 h.p. June 22.

SUPPLY AND TENDER BOARD.

Aluminium or Aluminium Alloy Conduit and Fittings. July 3.
Cable, twin, flat, 5,000 yards. June 19.
Carrier Telephone System. June 19.
Fork Lift, with pneumatic tyres and adjustable forks. June 19.
Portable Paint Spraying Outfit, with compressor and engine. June 19.
Spiral Springs. June 19.

BRADSHAW AUTOMATICS PTY. LTD.

Manufacturers of
"SILVER SPEAR" SAFETY PINS, TOQUE PINS, AND STITCH HOLDERS.
"SILVER SLIDE" PAPER CLIPS.
"GOLDSPEAR" HAT PINS COLLAR PINS.
"KRACK-A-BACK" MOUSE AND RAT TRAPS.

147 CHAPEL STREET, ST. KILDA, S.2, VICTORIA

Phones: LA 3236, LA 4667 (After Hours, U9892)
Telegraphic Address: "BRADPINS"

Precision Tool and Die Makers METAL STAMPERS

Manufacturers of BOOMAROO STEEL TOYS

ARTLAY MANUFACTURING COMPANY

BUTT STREET, SURRY HILLS, N.S.W.

Q.L.D. AGENT:
Jones & Joseph
Pty. Ltd.

S.M. AUST. and
WEST AUST.:
Evans & Inglis.

VIC and TAS. AGENTS:
Consolidated Merchandising
Co.

INDEX OF ADVERTISERS

Vol. XXXV - No. 1784 . . . JUNE 10, 1950

Page.		Page.		Page.	
Acme Eng. Co.	34	Gardner, Waern & Co. Pty. Ltd. (Front Cover)		80	
Acta Ltd.	36	Gilbro Eng. Co.	71	Munro, A. J. Pty. Ltd.	24
Adams & Walker	30	Goddard, H. G. Pty. Ltd.	73	National Industries Pty. Ltd.	11
Aerex (Australia) Co.	4	Goff, H. R. Pty. Ltd.	75	Nolex Eng. Co. Ltd.	64
Alger, C. & Son	80	Goninan, A. & Co. Ltd.	72	Norton Mfg. Co. Pty. Ltd.	65
Amplion (Asia) Pty. Ltd.	78	Goodall & Co. Pty. Ltd.	63	Norton, Tootill & Co. Pty. Ltd.	84
Andries, E. & Sons, Pty. Ltd.	52	Gregory Steel Products Pty. Ltd.	65	Oakey, J., & Sons Ltd.	62
Artlay Mfg. Co.	82	Griffith, Hassel & Griffith	56	Parbury, Henty & Co. Pty. Ltd.	61
Atkins, Wm., Ltd.	46	Grozier, W. D. & Co.	42	Phillips, Ormonde, Le Plastrier & Kelson	56
Austral Chain Co.	67	Gutwirth & Son	34, 64	Pneumatic Tool & Eng. Co. Pty. Ltd.	69
Australian Berry Baskets Co.	16	Halliday, R. H.	80	Power Element Co.	76
Australian General Electric Pty. Ltd.	21	Hanby, J. N.	26	Precision Gasket & Washer Co.	45
Australian Indicators Pty. Ltd.	6	Handford, C.	20	Price, William	16
Australasian Performing Right Association Ltd.	11	Hardie, J. M., & Co.	68	R. V. B. Eng. Products Pty. Ltd.	57
B. S. F. Pty. Ltd.	68	Harris, Hutchinson Pty. Ltd.	40	Randle Photo Engraving Co. Pty. Ltd.	78
Baird Eng. Co.	80	Hart, John Pty. Ltd.	40	Raynora Pty. Ltd.	32
Ballarat Litho. & Printing Co. Pty. Ltd.	68	Hawker, Richardson & Co.	66	Renold & Coventry Chain Co. Ltd.	7
Bambach, A. F., Pty. Ltd.	59	Hayman, E.	78	Rice, F. B.	57
Bishop's Implements Pty. Ltd.	74	Headland, E. J., & Co.	50	Richardson, H. Pty. Ltd.	63
Bleakley, H. & Co. (1910) Pty. Ltd.	75	Heine Bros. (A'asia) Pty. Ltd.	47	Richardson Gears Pty. Ltd.	35
Borthwick, T. A., Pty. Ltd.	63	Hendersons Federal Spring Works Pty. Ltd.	68	Robertson, C. H.	68
Bradshaw Automatics Pty. Ltd.	25	Herbert, A. E. Pty. Ltd.	37	Rockley Machinery Co.	81
Brenco Pty. Ltd.	33	Hicks Bros. Chemicals	78	Rodda, S. N. Ltd.	52
Brico (Aust.) Pty. Ltd.	25	Hobson Eng. Co.	78	Rubery, Owen & Kemsley (Pty.) Ltd.	19
British Commonwealth Pacific Airlines Ltd.	26	Hodgsons Dye Agencies Pty. Ltd.	32	Ryde Steel Works Pty. Ltd.	80
British Tube Mills (Aust.) Pty. Ltd.	45	Hoelle, J. J., & Co.	44	Sanderson Bros. & Newbold Ltd.	35
Brown & Dureau Ltd.	39	Hoffmann Mfg. Co. Ltd.	60	Scruttons Pty. Ltd.	66
Brook Bros.	64	Horton, H. C.	67	Selex Decal Pty. Ltd.	53
Bryant Bros. Pty. Ltd.	51	Hughes, R., Pty. Ltd.	64	Silicate & Dolomite Co. of Aust. Pty. Ltd.	57
Bunge (Aust.) Pty. Ltd.	38	Improved Constructions	36	Silverwater Rubber Co. Pty. Ltd.	79
C. B. D. Piston Co.	73	Independent Pneumatic Tool Co.	12	Smith, S. & Sons (A.) Pty. Ltd.	9
C. C. Die Castings Ltd.	83	Industrial Plant Installations Pty. Ltd.	27	Smith, W. E., Eng. Pty. Ltd.	41
Canadian Pacific Airlines Ltd.	32	International Combustion (A'asia) Pty. Ltd.	68	South Melbourne Scrap Iron Co.	36
Carr Fastener Co. of A. Ltd.	69	International Radio Co. Pty. Ltd.	76	Spruson & Ferguson	60
Carrick, Wedderspoon Company	61	John, M. B. Ltd.	20	Standard Chemical Co.	46
Carrier Air Conditioning Ltd.	58	Jones & Rickards Pty. Ltd.	54	Stanley Spring Co. Pty. Ltd.	80
Cave, Arthur S.	57	Jones Bros. Coal Pty. Ltd.	78	Star Machinery Pty. Ltd.	70
Ceelix Pty. Ltd.	14	Langdon, H. J., & Co. Pty. Ltd.	60	Steelcraft Pty. Ltd.	54
Churchley, R. B., Pty. Ltd.	69	Lewis & Taylor Ltd.	13	Steen, W. B., Pty. Ltd.	30
Cleveland Machinery Co. Pty. Ltd.	51	Ludowici, J. C. & Son Ltd.	50	Stewart, Alfred, Pty. Ltd.	42
Clingan Bros.	63	Mack, M. E.	79	Swift & Company Limited	24
Cootes & Jorgensen Ltd.	8	Mackie, A. H.	80	Taylor & Wearing	73
Consolidated Hi Lift Hoists Pty. Ltd.	50	Malcolm Moore Pty. Ltd.	32	Thomas, R. L., Pty. Ltd.	2
Cox & Bates	78	Mangrove Belting Ltd.	69	Thompson & Williams	3
Crane, G. E., & Sons Ltd.	52	Manufacturers' Equipment Co.	73	Thornthwaite, H. G. & Co.	3, 71
Cumming, J., & Sons	32	Marino Products Pty. Ltd.	37	Tool Equipment Co. Pty. Ltd.	43
Curliewia, C. P., & Co. Ltd.	64	Marks & Boyle	38	Torold Industrial Supplies Pty. Ltd.	10
Cyclone Co. of Aust. Ltd.	37	Marnar, Geo. W., Pty. Ltd.	54	Triefus Pty. Ltd.	58
Davies & Collison	60	Mastercraft Plastics	36	Tutt-Bryant Ltd.	77
Demco Machinery Co. Pty. Ltd.	35	Maxwell, Porter & Son Ltd.	67	Van Gelder, J. P., & Co. Pty. Ltd.	30
Diamond & Boart Products (Aust.) Pty. Ltd.	28	McKay, H. V., Massey Harris Pty. Ltd.	57	Walker, T., & Sons Pty. Ltd.	58
Dobbie Bros. Thermometers Pty. Ltd.	74	McLellan, W. J., & Co.	71	Warburton, Franki (Melb.) Ltd.	30
Don Electrical Co. Pty. Ltd.	57	McLeod, Bolton & Co. Pty. Ltd.	26	Warburton, Franki, Ltd.	23
Donald Eng. Co.	80	McOnie, G. T., & Co.	32	Warman & Douglas	70
E. W. Fittings Limited	64	Melbourne Wire Works	76	Wells, W. H., Pty. Ltd.	32
Electricity Dept., Sydney County Council	9	Metal Coatings Pty. Ltd.	58	Western Barbed Wire & Nail Pty. Ltd.	74
Exide Batteries of Aust. Pty. Ltd.	53	Metalex Pty. Ltd.	17	White, J., & Sons Pty. Ltd.	74
Felt & Textiles of Aust. Ltd.	5	Miller & Co.	36	White, K. C.	70
Ferodo Limited	21	Minerals Pty. Ltd.	38	Wilbro Hardware Co. Ltd.	65
G. M. F. Electric Motors Pty. Ltd.	55	Modern Tools Pty. Ltd.	47	Wilson Waratah Metal Co. Ltd.	76
Gadsden, J., Pty. Ltd.	52	Monsanto Chemicals (Aust.) Ltd.	31	Witzig, P. & Co. Pty. Ltd.	73

IF you are casting your eyes around for Good Castings



in connection with your manufacturing programme, keep in mind the extensive facilities and the background knowledge of "C.C."

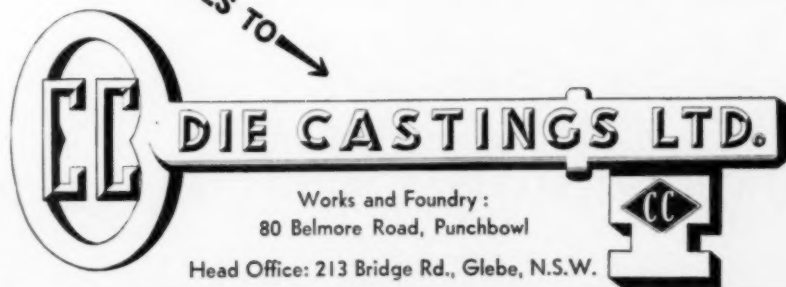
"C.C." is now producing a very wide variety of castings for an equally wide variety of industries. Why not find out what "C.C." can do for you.

Lower production costs . . . increase sales and profits with C.C. Die Castings.

Let us help solve your problems.

. . .

CAST YOUR EYES TO →



Telephones :
UL 1339,
UL 1344.

Works and Foundry :
80 Belmore Road, Punchbowl

Head Office: 213 Bridge Rd., Glebe, N.S.W.

Cables and
Telegrams :
"CASTINGS",
Sydney.



**COSTS LESS . . .
AND SAVES MAN-HOURS . . .
TO MOVE GOODS WITH A
*Tomlinson***

Cut expenses on transport within works . . . on movement of goods from one department to another . . . on short runs with luggage and other freight.

Manpower is costly, but a Tomlinson Battery Electric Truck delivers the goods silently, safely, quickly . . . and amazingly cheaply as well. A girl can master its controls in a matter of minutes. Battery charging costs but a few pence per day. Repairs and replacements are reduced to the absolute minimum.

The Tomlinson is all-steel, taking loads up to 1 ton. It turns in its own length, has reverse and forward controls, 5ft. x 3ft. platform and 8 to 16 miles' range at walking pace. Consumption averages 1 to 2 kilowatts daily. To recharge batteries, just plug-in when needed.

Wherever there's a load for short-distance travel, there's work for a TOMLINSON. Write for full details. Inspection and tests arranged on request.



Tomlinson

BATTERY ELECTRIC TRUCK

Automatic Safety Brake ● Adjustable Castor Wheels ● Foolproof Controls ● Reversible Motor

Sole Distributors :

NORTON TOOTILL & CO. PTY. LTD.

40 KING STREET, SYDNEY. BX 3215.

300 CROWN STREET, WOLLONGONG.

112 CHARLOTTE STREET, BRISBANE. B 2820.

Tels.: 1063, 1472, 1473.